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CONTENTS

Guest Editorial. Howard A. Rusk, M.D. ---- 271

Some Practical Public Health Problems in Virginia. E. M. Holmes, Jr., M.D., Richmond, Va. ---- 275

The Use of the Antithistamine Drugs in Dermatology. Edwin E. Barksdale, M.D., Washington, D.C., and George S. Ellis, M.D., Bethesda, Maryland ---- 278

Bacterial Endocarditis: Its Early Diagnosis and Modern Treatment. Paul D. Camp, M.D., Richmond, Va. ---- 281

Intrathoracic Hour-Glass Ganglioneuroma—A Case Report. H. Clarkson Meredith, Jr., M.D., Charlottesville, Va. -- 288

Hemostatic Absorbable Oxidized Cellulose in Traumatic Injuries. C. Frederick Johnston, Jr., M.D., F.A.C.S., Abingdon, Va. ---- 292

A Consideration of the Effects of Minor Degrees of Failure of Fusion of the Mullerian Ducts. Gwen S. Hudson, M.D., Richmond, Va. ---- 295

The Recognition of the late Pulmonary Residuals of Coccidioidomycosis. Randolph P. Pillow, M.D., University, Virginia, and Theodore E. Finnegan, M.D., Elyria, Ohio 298

Precocious Puberty in Girls. Randolph H. Hoge, M.D., Richmond, Va. ---- 303

Adult Cardiac Rehabilitation. Nathan Bloom, M.D., Richmond, Va. ---- 307

Anesthesia in its Relationship to Surgery. A. D. Hutton, M.D., Marion, Va. ---- 308

Continued on page 6.

LISTER NUMBER

June, 1949

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GUEST EDITORIAL

Dynamic Therapeutics in Chronic Disease

TODAY, as medical science moves forward in the prevention and cure of infectious disease, chronic illness has become the nation's primary medical problem.

One of the principal causes of the increasing prevalence of chronic disease has been the great advances in medical and surgical care which have prevented death and produced an aging population. Two thousand years ago, the average length of life was 25 years; at the turn of the century, it was 49; today, it is 66. In 1900, 1 person in 25 was 65 years of age or older; it is estimated that in 1980, the ratio will be 1 in 10. The chances are now two out of three that a young man now starting his working life at the age of 18 will live to his retirement age of 65.

As people become older, their medical needs change, and they demand more medical service. In 1940, the 26.5 per cent of the nation's population over 45 required over half the nation's medical services. By 1980, it is expected that the number of persons over 45 will constitute nearly half of the population.

The incidence of chronic disease is definitely related to economic status. It develops most frequently among families of low income and, when it strikes, results in further reduced income. In the National Health Survey of 1936, chronic illness was found to exist nearly twice as much among persons on relief as those earning $3,000 a year or over. A more recent study in Illinois showed that 23 per cent of all public assistance recipients were chronic invalids. In Connecticut, the percentage was 20, and in New Jersey, 38 per cent of those receiving old age assistance are chronically ill.

As chronic disease is usually nonreportable, reliable statistics as to its extent are difficult to find. Most currently used figures spring from the National Health Survey of 1935-1936. In this survey conducted by the United States Public Health Service, 800,000 families in 83 cities and 23 rural areas of 19 states were studied. It found that there were some 23,000,000 persons in this country who are handicapped to some extent by disease, accident, maladjustment or war. Later reports, based on smaller samplings, however, have indicated that chronic disease is even more prevalent. In a recent survey in New Haven, Connecticut, conducted by the School of Public Health of the Yale University College of Medicine, it was found that 121 persons for each 1,000 of the population suffered from chronic illness, and that one-third of this number were totally disabled.

Although chronic disease is more frequently found in older persons, authorities state that 16 per cent of all persons with chronic diseases are under 25 years of age. The Yale study found the percentage to be 33.

As Dr. Ernest P. Boas, an authority on chronic diseases, pointed out in the New York Academy of Medicine's report on "Medicine and the Changing Order", there are but two chronic diseases, pulmonary tuberculosis and mental illness, in which their medical care has become an accepted community responsibility. For other chronic invalids, there is no well-planned and integrated service. They find refuge in general hospitals, convalescent homes, homes for the aged and the back bedrooms of relatives.

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Much of the acute financial plight of both the municipal and voluntary hospitals results from the increasing numbers of the chronically ill who enter the hospitals and stay for long periods. Dr. Edward M. Bernecker, former Commissioner of Hospitals of the City of New York, reported 22.5 per cent of the general care beds in New York City municipal hospitals are occupied by patients with long term illnesses. The percentage in New York City voluntary hospitals is said to be about 20 per cent. In a study in Syracuse, New York, it was found that 84 per cent of 902 successive patients in medical wards were chronically ill.

It is agreed that a great many of the chronically ill must have general hospital care initially. Many, however, remain in the hospital purely because of the lack of any place to which they can go if they are discharged. Convalescent and nursing homes are totally inadequate to meet the need, and patients discharged to their homes, where there are no facilities for their care, frequently must be readmitted to the hospital.

One of the great needs is provision for total treatment of the chronically ill patient in terms of his whole problem. Many such patients cannot be rehabilitated to the extent of employability, but a great percentage can be rehabilitated to the point of sufficient self-care that they are able to live at home, requiring a minimum of aid from other members of the family.

Both the Veterans Administration and some civilian general hospital rehabilitation programs have demonstrated that rehabilitation to the point of self-care, and even to full or limited employment, is possible for many of the chronically ill who have been hospitalized for long periods. Yet, in most of our civilian hospitals, the patient receives no such services. Hospitals complain that the chronically ill are responsible for their crowding, but they do little to provide many with the training services that will permit them to leave the hospital.

In a study conducted recently in New York State on adult institutional care, one of the research staff asked an indigent old man suffering from heart disease why he didn't move into the county's excellent public home where he could receive good medical care and supervision. The man replied, "Of course I don't want to go to the county home; I'd get no assistance check from the county if I did. I don't care if I do need more attention and don't get it here." He then looked the interviewer directly in the eye and said emphatically, "It's a poor man that doesn't have a little money in his pocket."

The almshouse, poor farm or county home in this country has been regarded traditionally by self-respecting individuals as "the end of the road." Its residents and their relatives long have borne the painful social stigma of destitution or pauperism. Years ago, and, unfortunately, still in some isolated instances, the county home was the dumping ground for all those who could not compete economically or socially with normal society. Its "inmates" consisted of homeless children, healthy indigents, the sick, the insane, the senile and the feeble-minded. They had but one common characteristic—they were destitute.

Today, such practices are recognized universally as being socially undesirable, and specialized institutions have been founded to meet the needs of the various groups who formerly lived in the county homes. Mothers' pensions, old age assistance, and other special aid programs provided by the Federal Social Security Act and state programs also have altered materially the population of public homes.

As a result, the function of the county home has changed, and today they are primarily homes for the aged and chronically ill.

More and more states are recognizing the changing need and function of the county

home, and are converting such institutions into public nursing homes for the infirm and chronically ill. Such a program has been under way in Illinois since 1945, and in the 19 county homes that have been converted, 60 per cent of the 1,250 beds are occupied by old age pension and blind assistance recipients. The average cost to the state for each of them is $60 per month, far less than it would cost to provide for their care in less satisfactory facilities.

As the Joint Committee of the American Medical Association, American Public Welfare Association, American Hospital Association and American Public Health Association have pointed out, county homes should be converted into public nursing homes only if their physical facilities are adequate, if they are within reasonable distance of general hospitals with which close medical relationships are maintained, and if the responsible authorities are prepared to meet minimum standards.

As pointed out in a New York State study, accessibility and privacy are two of the main factors to be taken into consideration in converting public homes into facilities for the chronically ill. Aged patients fear isolation, and want to be where their friends and relatives can visit them, and where they can shop, go to the movies and see friends. They want a place in which to keep their possessions, and to live, if possible, in a private room or a small dormitory.

Primary, however, among the needs of such persons is the opportunity to do something purposeful and constructive. The majority have worked steadily and industriously in a society that respects only the productive. The ending of ability to do gainful work is, for most, a tragedy; it symbolizes the end of independence and purpose in life.

Medicine has neglected to use one of the most valuable tools in the management of the chronically ill and aged. All who have gone through an institution have noted the apathy and hopelessness of the residents. There are always a few, however, who are bright and active. They are the patients who have volunteered or have been assigned to tasks within their physical capacities.

The use of selective placement, whereby the physical capacities of the individual are matched against the physical demands of a job, can be used in an institution as well as in industry. Even though their disabilities may be severe, the great majority of the residents of public homes can do some task about the home. For some, it may be only simple housekeeping assistance; others have the ability and experience to direct various operations within the home.

Such jobs should carry regular compensation, even though it be small, for there is no greater satisfaction than that which comes through earning.

In many homes it would be possible to provide sheltered workshop facilities in which residents could do either industrial home work or necessary services for the community operating the home. Like work for the homebound, such plans require both imagination and close supervision to prevent exploitation, but they would pay tremendous dividends by providing a purpose in life for many patients.

With the introduction of rehabilitation programs in general hospitals, increased facilities for convalescent care and home care programs of medical, social, visiting nurse and visiting housekeeper services, many of the aged and chronically ill will not need to seek admittance to public homes. Many present residents could be restored either to employment or self-care with the introduction of dynamic rehabilitation programs.

If the aged and chronically ill are to have the comfort, security, dignity and companionship that should be the heritage of every older person, public homes must pro-

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vide them with cheerful, attractive surroundings, as much privacy as possible, a place for their belongings, opportunities for recreation and social activity and a chance to do something productive.

With the growing incidence of disability due to chronic disease, medicine must assume a great deal of the leadership in the responsibility of society which Dr. Edward L. Bortz, so aptly summarized when he said, "The society which fosters research to save human life cannot escape the responsibility for the life thus extended. It is for science not only to add years to life, but, more important, to add life to the years."

HOWARD A. RUSK, M.D.

EDITOR'S NOTE. Dr. Rusk is Professor and Chairman, Department of Rehabilitation and Physical Medicine, New York University College of Medicine. He is also Consultant in medical rehabilitation to (1) Medical Director, Veterans Administration, (2) Secretariat of United Nations, and (3) Department of Hospitals, City of New York. Dr. Rusk is Associate Editor, New York *Times*.

Floral Eponym

ZOLLIKOFERIA

ZOLLIKOFER, KASPER (CASPAR) TOBIAS

In Kelly's Cyclopedia of American Medical Biography under Zollickoffer, William, (1793-1853) it is stated, "It is said the Zollikoferia, one of the *asteraceae*, was named after him by De Candolle." William Zollickoffer, a graduate of the University of Maryland, and lecturer on medical botany, materia medica and therapeutics at that institution, was one of the first to write a materia medica of the United States (1819). "His death took place in Newmarket, Virginia, in 1895" (sic). I have carried this reference around with me to various libraries over the country without gaining any additional information. As a last resort I wrote to S. F. Blake, Senior Botanist, U.S. Department of Agriculture. He writes me as follows: "The guarded suggestion in Kelly's Encyclopedia of Medical Biography that the American physician William Zollickoffer had a genus of plants named for him is certainly based on error. The only generic name with a similar spelling is Zollikoferia. This was first used in 1825 by Nees to rename a genus Peltidium of the Compositae which had been published in 1820 by one Zollikofer of Altenklingen, Senatus judicatorii Pagi St. Gallensis membro. This name proved to be a synonym, so in 1838 De Candolle made a new genus of the same name dedicated to the same man, C. T. Zollikofer Sancto-Gallensi botanico."

According to Pritzel, Kaspar (or Caspar) Tobias Zollikofer was an "Appellationsrath" (evidently an official of a court of appeals) in St. Gallen, Switzerland. He published a small work on the Swiss flora in 1828."

SOME PRACTICAL PUBLIC HEALTH PROBLEMS IN VIRGINIA*

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In the last forty years Virginia has made splendid progress in the field of Public Health. In the early part of this century general sanitation was poor, maternal and infant mortality rates were high, and many communicable diseases were a source of great concern to the early health worker. Hookworm, malaria and typhoid fever called for vigorous control efforts. Smallpox and diphtheria were present consistently in the population and were major causes of death. The tuberculosis rate of that period would today be considered a disgrace to the state.

Through the efforts of the first workers, sanitation was greatly improved, bringing under control hookworm, typhoid fever and malaria. Through education of the public; through legislation; and with the use of immunological agents, smallpox and diphtheria no longer are a menace. With the building of public sanatoria and the inauguration of the tuberculosis clinic service, reduction in the tuberculosis rate was achieved. Through intensive efforts directed toward improving maternal and child health, infant and maternal mortality have been reduced greatly.

Great as these accomplishments are, many problems remain for the health workers of the State. An attempt will be made to discuss the more important of these in a somewhat detailed manner—others will merely be mentioned.

The need for greater coordination of all governmental health work, while not of sufficient seriousness to be considered a problem in itself, is a subject worthy of discussion. Jurisdictional and geographic lines in government are necessary, but complete independence and difference of policies in Health Departments functioning within these areas are difficult for the citizen to understand. One county functions under one set of sanitation ordinances, an adjacent city another; the resultant confusion in a metropolitan area is often detrimental to the total health program. There have been many suggested remedies: 1. Voluntary cooperation by all health departments in a metropolitan area. A splendid example of this is the greater metropolitan health officers conference made up of the directors of the Health Departments of the Virginia and Maryland counties and cities adjacent to the District of Columbia. 2. Planned coordination, i. e., more complete inclusion of the cities in the statewide public health program. This would necessitate a give and take attitude on the part of both the state and cities. It would require inclusion of the cities in program planning and policy making conferences. It would call for a willingness on the part of the cities to relinquish certain prerogatives. It would require that the state allow greater authority to the local governing bodies, and, last, it would entail supervision over municipal as well as county departments. 3. Official consolidation, i. e., joint city and county units. These have functioned in a most satisfactory manner in many areas, notably the city of Charlottesville and Albemarle county, Virginia; Birmingham and Jefferson county, Alabama; Louisville and Jefferson county in Kentucky. Admittedly all of these plans have advantages and disadvantages. Ultimately, a greater coordination of the work of health agencies in metropolitan areas will be a necessity, if confusion is to be avoided and the over-all health program advanced.

If due and serious consideration is given to the above mentioned difference in policies between local health departments, a solution to one of the most confusing and in a sense amusing public health problems might be effected. The lack of uniformity that often exists in public health sanitation ordinances is a serious source of confusion to the public. Prior to the last session of the legislature, at which time three important uniform and state-wide sanitation laws were promulgated, the counties and cities worked under many different food sanitation and trailer camp ordinances. This new legislation was a great step forward, but at present lack of uniformity in the sanitation ordinances governing the production of milk and those covering meat inspection not only cause misunderstanding, but

*Read before the Health Officers Section, League of Virginia Municipalities, at Old Point, Va., 28 September, 1948.

also impedes the progress of the programs directed toward sanitary control of milk and meat products. I can understand the feeling of the dairyman, who wishes to sell in two or more markets, complying with two or three different standards and being inspected by two or three different inspectors working under different regulations and with varying ideas of interpretation. The standardization of milk ordinances and the elimination of duplication of inspection is a necessity. This, if accomplished, should be under local enforcement under the supervision of the State Health Department.

Two major cities in the state bear the brunt of the inspectional service of local plants slaughtering meat to be processed for sale within the state. These plants do not function under federal inspection, and, in consequence, are inspected by the local health departments from local tax funds. These inspections are made under two similar but slightly different ordinances. Further, meat produced in many local areas is not under any sanitary inspectional service. It is obvious that there is a need for state-wide meat inspectional legislation.

If uniform ordinances are to be considered it is suggested that these ordinances be prepared following joint conference between local and state health department sanitarians. Through such consultative conferences the experiences of those who had been working under various ordinances could be made of use. Such conferences would assure the greatest spirit of cooperation from local areas later to be charged with enforcement.

Since the beginning of the 20th century when the average span of life was 49.2 years, the span has increased approximately 18 years, and today the average life expectancy is sixty-eight years. This record is unequaled in history and may never again be reached. Now, of the five leading causes of death, four—heart disease, cancer, cerebral hemorrhage and nephritis—are diseases of middle life and old age. The rapid growth of our population beyond median life is causing a corresponding increase in chronic and degenerative diseases, which in turn cause increases in disability and mental impairment.

Many thinking public health authorities view this condition with gravity, realizing that this spectacular gain in longevity, which, while a public health accomplishment, is a growing problem. Public health must meet a new challenge, and adapt existing services, and provide new and additional services, to meet the needs of the aged. Preventive measures aimed at these newer problems must be developed, such as: health education, diagnostic clinics, adequate medical and nursing care, including sufficient convalescent type beds to relieve congestion in general hospitals. The Richmond Health Division of the Community Council of the Community Chest has decided to conduct a long range study of the medical care problems of the aged. A pilot committee has been appointed to coordinate this study which will begin functioning this fall.

Within recent years the attention of Public Health has been directed toward medical care, it being realized that the provision of adequate medical services for the indigent of the community is a public health problem if the total health of the community is to keep pace with increasing medical knowledge. Medical care is more than the mere provision of hospitalization for the needy. Its scope includes domiciliary care including both medical and nursing service, diagnostic clinics, obstetrical care, adequate sanitoria beds for tuberculosis and mental patients, sufficient convalescent beds, and beds for the chronically diseased and terminal patients. Government responsibility for the provision of adequate medical services for the indigent is now generally accepted. However, there is as yet no uniformity of opinion as to the exact governmental agency upon whom to affix the responsibility. In some states Health Departments are charged with medical care; in others, Welfare Departments. In some states and localities there is a division of responsibility; in others a duplication. The State of Maryland has developed a comprehensive and excellent program under the Health Department. Baltimore City is midway in a long range detailed study of the medical care problem. Last year the Health Department of the City of Richmond, working with and through the Health Division of the Community Council of the Community Chest, embarked on a study of medical care. Committees were appointed to study the following aspects: Medical care in the home, hospitalization, chronic and convalescent care, outpatient care, and rehabilitation. As a result of the work of the committee on medical care in the home, the Health Department has completely revised its system of domiciliary care. The new plan calls for three full-time fellows in the general practice of medicine, under the supervision of a part-time physi-

cian (who must be a diplomate of the American Board of Internal Medicine). It also calls for a general practice clinic to care for the non-hospitalized case, and for close coordination between the fellows in medicine and the Public Health and Instructive Visiting Nurses of the city. The program, while a joint project with the Department of Medicine of the Medical College of Virginia, is under the direction of the official health agency. It is hoped that through this change the number of hospital days per patient will be reduced, as well as the number of hospital admissions. A detailed report of this program will be published by the Director of the Health Department at a later date.

More and more health agencies are developing plans for housing programs. Housing, as related to health, is not a new problem. It is one that is centuries old. In England in the early 18th Century public attention was directed by medical men to the squalid living conditions of the poor. In 1837, Dr. T. Southward Smith, of the London Fever Hospital, published "A report on the physical causes of sickness and mortality to which the poor are particularly exposed, and which are capable of prevention by sanitary measures". He vividly and aptly described the squalor and filth existing in over-crowded tenements. The medical histories of Europe covering the 18th and 19th centuries are replete with articles on the subject. However, it was not until the second decade of this century that the modern concept of housing as a public health function came into being. Under this new concept the sanitation and health aspects of housing are considered from two viewpoints—the first, commonly referred to as "Slum Clearance," may be considered as the elimination of blighted housing areas which are hopelessly beyond correction. Some authorities consider this as a curative approach in that it requires condemnation and total eradication. While costly in the economic sense, it is often necessary, and is an integral part of the solution of the housing problem. However, it is just a part, not the whole of a good housing program. The more recent programs call for long range planning by all interested agencies and include in addition to slum clearance two essential adjuncts. These may be called preventive programs, and consist of remedial measures to improve existing structures. The first consists of repairs to existing structures to prevent them from becoming blighted; and the second calls for improvement of sub-standard houses in order that they may be brought up to the acceptable minimal standard. An effective housing program requires the passage of adequate ordinances and regulations by government. No community should hastily seek such legislation. First, the community's problem should be studied in detail and a long range program developed. Such a study by a committee or group composed of representatives of health, welfare, real estate boards, planning boards or commissions, architects, civic groups and members of the legislative body of the community can develop a program that will be adequate and satisfactory for the community's needs.

Some of the practical public health problems in Virginia have been discussed in more or less detail. However, there are many health problems existing which cannot be described in the time alloted for this paper. Recent impetus has been given to the control of cancer and heart disease. While this interest has been laudable, it has been directed chiefly toward education of the laity and toward research. Much remains to be done before these two major causes of death can be brought under control. We must consider these problems not only from the medical viewpoint, but also from the socio-economic point of view, particularly as these affect the middle and old age groups of the population, and are so intimately linked with economic security.

Another group of diseases still presenting acute problems, despite magnificent public and governmental support, are tuberculosis, syphilis and the lesser venereal diseases. Despite intensive control measures, these are still major public health problems and call for continued long range control programs.

A splendid beginning has been made in the field of industrial health, yet there remains much to be done—the health of the worker must be safeguarded. This necessitates larger governmental appropriations and intensification of the existing program.

In conclusion, an attempt has been made to describe or mention some of the existing public health problems. The paper has been written with the realization that achievements in the field of public health are best accomplished by thorough study and planning not only on the part of the health agency, but in cooperation with an informed citizenry, and through the continued application of long term control measures.

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THE USE OF THE ANTIHISTAMINE DRUGS IN DERMATOLOGY*

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Introduction: The purpose of this paper is not to present any statistical analysis of the number of cases studied. It is desired to present only observations and impressions obtained over a period of several years. No attempt will be made to separate the individual antihistamine drugs according to their manufacturers. Suffice it to say that practically all of the drugs were used with the exception of some of the newer ones. The results to date correspond fairly closely with other workers.

Experimental Work

Experimentally it was attempted to see if itching could be produced in normal individuals and its relief brought about by the topical application of these drugs.

The experiment was carried out in the following manner: To one arm was applied an ointment containing the antihistamine drug. To the other was applied only the ointment base. By using a 1-10,000 solution of histamine with the scratch-test method, itching could not be produced on the arm containing the antihistamine drug. A very definite itching did occur on the arm containing only the drug base. Wheals occurred on both arms with no appreciable difference in their size nor disappearing time. It should be noted that Feinberg and others, following the intravenous injection of benadryl, were not able to produce wheals with intradermal injections of histamine. It is not considered that these two experiments contradict each other since one was performed by an intravenous method and the other by a topical one.

Antihistamine Drugs by Mouth

The following groups of cases have been studied following the oral administration of 200 to 400 mgs. daily of these various drugs:

(1) Urticaria (50 cases)

In acute urticaria (usually due to food) which, of course, is transient, a very marked and prompt relief of symptoms can be obtained. In chronic urticaria a relief of symptoms usually occurred but it varied from slight to marked. This result was frequently transitory. The symptoms recurred when the drug was discontinued.

(2) In atopic dermatitis (15 cases)

A small percentage of the cases noted some immediate improvement, some a prolonged moderate improvement, but in no case was the course of the disease influenced.

(3) Pruritus ani (11 cases)

In the group of pruritus ani it can be stated that the results were unsatisfactory.

(4) In poison ivy (25 cases)

It is felt that with the possible exception of urticaria, the antihistamine drugs here have their most important place in dermatology. The symptoms were rather markedly decreased and the duration of the disease shortened.

The Clinical Use of the Antihistamine Ointments

(1) In urticaria (8 cases)

There was no relief with the topical application in contrast to the parenteral administration.

(2) Atopic dermatitis (11 cases)

In the majority of the acute cases of atopic dermatitis a moderate relief from itching was noted as long as the ointment was used. In the chronic cases the results were practically nil. The clinical course of the disease was not affected.

(3) Pruritus ani (6 cases)

There was not any response in pruritus ani.

(4) Poison ivy (28 cases)

All cases of poison ivy had immediate relief three to four hours after treatment was instituted. In the majority of the cases repeated applications of the ointment every three to four hours controlled itching indefinitely. The ointments did not have

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*Read before the annual meeting of the Medical Society of Virginia, in Richmond, October 18-20, 1948.

any appreciable effect on the duration, severity, or course of the disease.

Reactions

Many reactions, such as sedation, hypnosis, nausea and vomiting, dizziness, vertigo, etc., have been reported from the parenteral administration.

In three cases treated with the ointments an acute vesicular eruption appeared at their site of application within three to seven days. In all these cases positive patch tests to the ointments containing the antihistamine drug were obtained, but negative patch tests to the ointment bases. By personal communication to the manufacturing chemist the information was obtained that these ointments only contained the antihistamine drug and their base. This, then, would tend to indicate that the antihistamine drug itself might be capable of producing an allergic reaction.

Details of only one case will be presented:

Mrs. M. G. had been treated over a period of four years by one of us (E.E.B.) for a very definite neurodermatitis on the back of her hand. This patient had repeatedly had domestic difficulties and each exacerbation of her condition could be definitely traced to each family disturbance, which were many. Approximately six months ago she presented the same picture again, namely, a dry, scaly patch of eczema on the back of the right hand, approximately 2 in. in diameter. Two weeks after the use of an antihistamine ointment she developed a dermatitis venenata. The drug was discontinued and after the acute eruption faded a patch-test was done with the drug. The test was strongly positive, but negative to the ointment base. Unfortunately, and thoughtlessly, she was later given the same antihistamine drug by mouth. This put her in the hospital with generalized acute eczema.

Withdrawal Symptoms (2 cases)

Two cases of pityriasis rosea were treated with an antihistamine drug for 3 weeks and developed weakness, loss of pep, mental depression, loss of appetite, insomnia, and fatigue when the drug was discontinued. These withdrawal effects lasted about 6 weeks and terminated after large doses of thiamin hydrochloride were gives empirically.

CONCLUSIONS

A series of cases, including urticaria· atopic dermatitis, pruritus ani, and poison ivy, have been treated with the antihistamine drugs both parenterally and topically. It is our feeling that parenteral administration is superior. It has also been observed that the topical application of the drugs in addition to producing burning and stinging at the site of application may also produce an allergic reaction. With this observation in mind, the question comes up: Might not the topical applications in the future be placed in the same category as the sulfonamides and penicillin are at the present time? It is undoubtedly true that most dermatologists feel that they are contraindicated, the reason being that their use is so important internally that one should not run the risk of possibly sensitizing individuals by their local application. It should, however, be pointed out that present reports do not prove this. In the early days of sulfonamides and penicillin this was not considered either.

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DISCUSSION

DR. RAYMOND KIMBROUGH, Richmond: Calling attention to the probable increased sensitizing effect of the local use of the antihistamine drugs as compared to their internal use is timely and appears to be worth more study. It should alert others to keep records, or to set up experiments, to verify or disprove this point.

The general pattern of action of these drugs includes local anesthesia, varying sedative effects, and marked different individual responses with regard to effectiveness, side actions, and dosage required. These marked different individual responses may depend upon the severity of the disease, the stage of the disease, the presence of other diseases as well as other physical and chemical factors. Also, histamine is not the only factor in allergic diseases; therefore, the antihistamine drugs can be only a part of the solution to dermatologic and other allergy problems, even though they appear to be able to block all histamine actions except that of gastric secretion.

The large number of antihistamine drugs available in the recent past has been amazing. Most claims for efficiency, and of lack of undesirable side actions, have not been demonstrated by uniform experiment.

When an allergy problem arises now, and the doctor turns his thinking to the use of antihistamine drugs, you can likely hear him murmur *"E pluribus unum"*.

DR. THOMAS W. MURRELL, Richmond: The wisest doctor I have ever known once said to me that the control of itching is a failure as compared to the control of pain.

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This is true and is the reason for the great hope that came with the introduction of the antihistamines into therapy. There is a constant procession of new antihistamines brought to us under a multiple of trade names. They are apparently chemicals of a different structure but relatively the same group, and they have varying results. A great deal of work has been done[1] which proves that the antihistamine drugs locally applied do block off the penetration of histamine into the cells of the skin and prevent wheal formation with the consequent relief of itching, and in some cases the results have been nothing less than dramatic.

It is a common thing in dermatology to see a patient with an eczematoid condition. Now the word, eczema, defines a syndrome composed of five symptoms. These are redness, itching, thickening, moisture and scaling. Under proper therapy it not infrequently happens that the redness, thickening, moisture and scaling disappear but the symptom of itching remains. This is particularly true in the syndrome of pruritus ani. Now, if itching remains, trauma follows "as the night the day" and trauma will bring back into being the original syndrome. Consequently, anything which will control the itching, which is a residual symptom, will be a blessing to obtain permanency of results. It is rather obvious that in the use of the antihistamines we are treating a result and not a cause. If the antihistamines are used, they should be used as a part of a treatment. For instance, the relief of itching of an urticaria does not in any way meet the problem of removing the offending food. The use of the new remedy in no way negatives the standard approach of things previously done and of proven value, yet in themselves not controlling itching, which is the hope of the antihistamines.

DR. OSCAR SWINEFORD, JR., Charlottesville: Dr. Barksdale and his associates have made several points in their paper which I might summarize briefly. First, they felt that the itching incident to the use of histamine was reduced by antihistamine drugs. Others have found that not only itching but whealing have been interfered with by the topical use of those drugs.

Second, in four of their patients they elicited typical signs of contact allergy by the use of patch tests in patients who had become sensitized after using these drugs internally. Third, they described a case which had become sensitized, apparently, by topical application.

Fourth, they advised against the topical use of these drugs. It is well known that the topical application of drugs to diseased skin is more likely to sensitize than when applied to normal skin.

1. McGarack *et al.: Archives D. and S.*, March, 1948.

As suggested by Dr. Kimbrough, the so-called antihistamine drugs have other effects than interference with the histamine effect on cells. These drugs are effective local anesthetics. Pyribenzamine and antistine, for example have local-anesthetic potencies about twice that of procaine. In addition, they are good sedatives. Many people use them at night, instead of the barbiturates.

These drugs are related chemically to some of the local anesthetics. Inasmuch as the local anesthetics are potent sensitizers, it is rather surprising that more sensitization to the antihistamine drugs has not been reported. We have had one case in which we thought periarteritis nodosa followed the use of one of the antihistamine drugs.

I should like to emphasize that the antihistamine drugs do not supplant the older sympathomimetic drugs, ephedrine and adrenalin. They have different points of action. The older drugs tend to reverse the allergic reactions after they have formed; the antihistamine drugs tend to prevent the action of histamine. They block the action, when histamine is formed, in somewhat the same way that para-aminobenzoic acid blocks the action of sulfonamides.

We rarely see satisfactory relief from these drugs in severe atopic dermatitis, severe hay fever, or any other severe allergic reaction. In general, we have been somewhat disappointed in them. We do find that the sympathomimetic amines, ephedrine and adrenalin, are effective often when the antihistamine drugs are not.

When there are side reactions to one of the compounds, try all of them until a suitable one is found. The sympathomimetic drugs can be used during the day, when excitement and nervousness are not so noticeable, and the antihistamine drugs at night.

Attention should be called to the fact that the antihistamine drugs, when effective at all, are effective only in the atopic or the anaphylactic type of allergy. They may control itching by their sedative and local anesthetic effects. The tuberculin type of allergy is not affected by these drugs.

DR. BARKSDALE, closing the discussion: We would very much like to thank the discussers. I am sure that you gentlemen in the audience have obtained more information from them than you have or will from either of us. There are a few points that might be worth re-emphasizing. We have noticed that a combination of two or more drugs by mouth in some cases seems to be better than one alone.

I do feel that the topical application of the antihistamine drugs is not without untoward effect. We have herein reported several cases with skin reactions which appear to be of a definite allergic nature.

BACTERIAL ENDOCARDITIS: ITS EARLY DIAGNOSIS AND MODERN TREATMENT*

PAUL D. CAMP, M.D.,
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The interest in bacterial endocarditis has been greatly stimulated, and the importance of an early and accurate diagnosis has greatly increased since the advent of therapy with the sulfonamides and the anti-biotics, chiefly penicillin and streptomycin. Whereas, in the past these types of diseases were almost invariably fatal, the outlook now with modern therapy is much more hopeful.

Bacterial endocarditis was recognized by the early bacteriologists and by 1900 all of the commoner types had been described. Schottmuller and Libman were responsible for a great deal of the earlier knowledge of subacute bacterial endocarditis. Lohlein and Baehr described the incidence and specific character of the glomerulo-nephritis which often accompanies this disease.

The terms acute and subacute bacterial endocarditis are in general use but these terms are somewhat arbitrary, the term acute being applied if the patient either dies or recovers within two months. This terminology will almost surely be changed because of the effect of the newer methods of treatment. It would seem more accurate to apply the diagnosis of acute staphylococcic endocarditis in cases caused by staphylococcus, or subacute streptococcus viridans in cases caused by streptococcus viridans.

ACUTE BACTERIAL ENDOCARDITIS

Etiology: A great number of organisms have been described as causing acute bacterial endocarditis; however, very close to all of the cases are caused by one of the following organisms, and the relative frequency in a report of 48 autopsied cases from Boston was as follows: Streptococcus hemolyticus 43.6%, staphylococcus aureus 22.8%, bacillus coli communis 10.5%, pneumonococcus 8.4%, gonococcus 4.2% and meningococcus 4.2%.

Age: It is most frequent in the fifth decade.

Sex: About 73% males to 27% females.

There is apparently some difference in opinion concerning the incidence of acute bacterial endocarditis in hearts not previously damaged and in chronic valvular heart disease. Dock feels that although fibrotic changes favor such an infection, clinically more cases occur in patients without previous heart disease.

Pathology: The most important pathological findings in acute bacterial endocarditis are the vegetations usually found on the valves of the left side of the heart but at times extending to the nearby endocardium. The vegetations are sometimes as large as beans or peas and are composed of masses of fibrin, bacteria, and leukocytes. An occasional mycotic aneurysm is formed and ulceration with rupture of the valve leaflets and chordae tendineae is not uncommon.

Symptoms: Acute bacterial endocarditis most often occurs in the course of some other co-existing disease, for example, pneumonia or septicemia due to staphylococcus infection, and the symptoms at first are those of severe infection consisting of septic type of fever, sweating, chills, prostration, and delirium. Until the advent of modern medication the patient usually went quickly downhill, becoming rapidly extremely ill. If the patient lived as long as ten to fourteen days, signs and symptoms due to emboli breaking off from the endocardium and lodging in various arteries or veins usually developed.

Signs: These patients are often extremely ill without any definite signs to help determine the diagnosis. Until localizing embolic phenomena develop the diagnosis is often overlooked and discovered at the postmortem table. Murmurs, either systolic or diastolic, existing previously and becoming louder or developing for the first time and, perhaps, increasing during the course of the disease are important. There is often a leukocytosis of 20,000 to 30,000 with a high polymorphonuclear per cent, a secondary type of anemia, and, finally, a positive blood culture. The complication of emboli and anemia have been noted. Heart failure occasionally occurs.

In the past the *treatment* has been primarily supportive and the outcome was most often fatal. The course and the prognosis of the disease has been entirely changed due to medication with the

*Read before the Richmond Academy of Medicine, May 24, 1948.

sulfonamides and antibiotics, although as yet we have very little definite data in the form of statistics. The treatment should be started as soon as the diagnosis is suspected, and not delayed until it is proven. Details of treatment will be discussed along with the treatment of subacute bacterial endocarditis.

Case I.—L. R. K., white male, aged 39, occupation, tobacconist. The patient had been in good health generally until his present illness. There was no history of previous rheumatic or luetic heart disease, nor was there any physical finding suggestive of valvular heart disease until the beginning of his present illness.

The present illness started about May 30, 1936, while the patient was riding on a train; he felt tired and weak. His family physician, Dr. B. L. Phillips thought the patient had grippe-like infection. The patient failed to improve, his weakness increased, and he began to run a septic temperature. He sweated a great deal and was somewhat nervous.

The physical examination on June 5, revealed a very ill patient who was somewhat toxic. There were questionable petechiae in the lower conjunctival portion of the left eye lid. The heart appeared only slightly enlarged. At the apex the first sound was replaced by a murmur; the second sound was rather sharp. At the base the first sound was practically entirely replaced by a murmur; the second sound faded off into a murmur. A slight systolic and a blowing early diastolic murmur could be heard with their maximum intensity in the second interspace to the right of the sternum. At the apex there was a rather rough and loud systolic murmur which had a suggestive presystolic phase and there was also a late diastolic murmur. The spleen could not be felt. Temperature was 101; pulse was 120.

Six days later the patient's temperature was 101.4; pulse was 114. All the murmurs were more marked and definitely louder and there was a definite gallop rhythm present. There were also questionable petechiae in the right eye. The patient seemed very ill and toxic. His breathing had increased and there was some dullness at both bases, and moist rales could be heard in addition to the crepitant rales. The patient was having jerking motions of his arms from time to time; however, he did not have definite convulsions.

Repeated blood cultures in our laboratory were positive for staphylococcus albus and the cultures from the State laboratory were positive also.

This case presents a rather typical but unusual case of acute bacterial endocarditis due to staphylococcus albus occurring without any known preceding disease or known mode of entry. This case was seen during the summer of 1936; at this time the use of the sulfonamides had not been proven to be of any value, nor had penicillin or the other anti-biotics been introduced. The patient ran a rather down hill course and died within a few days after my last visit. This case was presented to show the hopelessness of the situation at that time. Although the fatality rate in acute bacterial endocarditis is still high even with our present methods of treatment, it is definitely better than it was.

SUBACUTE BACTERIAL ENDOCARDITIS

Subacute bacterial endocarditis occurs much more frequently than acute bacterial endocarditis. White and Jones state that it occurs in one to two per cent of all cardiac patients in New England, and in about five per cent of rheumatic heart disease. In congenital heart disease as a whole the incidence is about seven to eight per cent; however, in certain defects, for example, the patent ductus arteriosus, interventricular septal defects, and bicuspid aortic valves the incidence is above 25 per cent.

Subacute bacterial endocarditis very rarely occurs in a normal heart. In the vast majority of cases, the heart has been damaged by a rheumatic fever type of infection or is the seat of a congenital defect. Very rarely subacute bacterial endocarditis is super-imposed on an aortic valve damaged by syphilitic infection.

Sex: Males predominate about three to two despite the fact that females have a higher incidence of mitral stenosis. This lends support to the opinion that cases of marked mitral stenosis infrequently develop subacute bacterial endocarditis.

Age: In Kelson and White's series of 250 cases the greatest incidence was between fifteen and thirty years.

Pathology: The chief findings of pathological interest in the heart are the vegetations on the endocardium. These consist of masses of fibrin, leukocytes, erythrocytes, bacteria and products of bacterial decomposition. These vegetations are not usually as large as those described above in acute bacterial endocarditis but are larger than the vegetation of rheumatic fever in which no bacteria are

found. The vegetations may occur on the endocardium or endothelium of various congenital defects. Despite the fact that occasionally infected emboli and thrombi may be found in the blood vessels of the valves, it is probable that the bacteria do not as a rule start their damage in this way but are rather deposited directly from the systemic blood stream on the damaged valve surface. The vegetations may spread along the endocardium adjoining the valves and at times the chordae tendineae may rupture. Pericarditis is rare. Bracht and Wachter in 1909 reported a somewhat typical type of myocarditis.

Symptoms: In contrast to the rather dramatic symptoms of acute bacterial endocarditis the onset of acute bacterial endocarditis is usually gradual. A person with a congenital or chronic rheumatic heart disease may gradually begin to feel bad. They often think that they have had a "common cold" which continues to hang on or maybe a "grippe-like" infection from which they fail to recover. There is often a gradual loss of weight, a low grade of fever, loss of appetite and general weakness. The course of the disease varies but is usually slow and formerly was progressive. The above mentioned symptoms increase, a severe anemia develops, the temperature as a rule becomes swinging and septic in type. Finally, the symptoms of emboli occur, causing local pain and other localizing symptoms such as renal infarction with renal pain, frequency and dysuria, or cerebral emboli may cause hemiplegia or coma followed in a short time by death. The cerebral signs and symptoms may be the first ones to cause the patient to see his physician. A certain number of these cases will develop congestive heart failure with severe dyspnea, orthopnea, and upper abdominal pain.

Signs: The signs of this disease are more characteristic than the symptoms but often a given case will not present all the important signs. These signs are fever, a peculiar pallor of the skin called "cafe au lait" by Libman, enlarged spleen, petechial hemorrhages at various points, clubbing of the fingers, evidence of rheumatic valvular heart disease or congenital heart disease and bouts of hematuria, and, finally, the rather rapid development of a severe anemia. Osler's nodes, first described by Muller, occasionally occur. Clubbing of the fingers is found in about three-fourths of the cases.

Enlargement of the spleen is an important sign and should always be sought for. The laboratory is of help in revealing the anemia which is often severe with perhaps 3 to 3½ millions red blood corpuscles and 50 per cent hemoglobin, and, secondly, and most important, in finding the offending organism—usually the streptococcus viridans—in the blood culture. The urinalysis reveals red blood corpuscles. The presence of a murmur is almost always noticed and should be carefully searched for. Without a murmur the diagnosis must be made with caution. A bicuspid aortic valve, however, rarely shows murmurs until late.

Case II.—J. R. F., white male, aged 21, first seen by me 1-10-45. The chief complaint was fatigue and headache for the past year, worse for the past two or three weeks.

Present Illness: The patient was turned down by the Army in 1943 because of a "leaking heart". The patient had rather definite migratory polyarthritis lasting four or five months, occurring seven to eight years ago. He also had chorea.

It was felt that this patient had chronic rheumatic heart disease with definite aortic regurgitation and mitral regurgitation and probable mitral stenosis with a tendency towards hypertension. I was uncertain as to whether the temperature and rapid increased sedimentation rate and loss of weight were due to reactivity of rheumatic infection, or due to a subacute bacterial endocarditis, but favored the latter. Electrocardiographic findings at this time were normal.

The patient failed to cooperate with either Dr. W. F. Cavedo or myself. The next thing we knew of this patient was when he was admitted to the Grace Hospital on Nov. 9, 1945. He came in with a chief complaint of inability to walk, stating that he was suddenly taken ill about eight weeks previously. He had continued to have pains in his hips and legs which he described as of a rheumatoid type and which migrated from joint to joint. The physical examination of his heart was essentially the same as before. There was some atrophy of the muscles of his legs but there was no evidence of definite joint involvement. The spleen was not felt; no evidence of congestive failure.

The temperature on admission was 102; pulse 80. The sedimentation rate was very definitely elevated and the patient had a very definite leucocytosis. This patient responded fairly well to salicylates by mouth and again it was thought that the diagnosis rested between an acute flare-up of rheumatic

XUM

fever and subacute bacterial endocarditis. At this time I favored the diagnosis of acute rheumatic fever. However, on the fifteenth day after admission he suddenly had a convulsion and became unconscious and never regained consciousness, his temperature and pulse going steadily up and the patient made a lethal exodus on the nineteenth day after admission.

I had Dr. James Asa Shield see the patient in consultation and he felt that neurologically the patient had an embolus of the left middle cerebral artery. We both felt that this was caused by an embolus connected with subacute bacterial endocarditis.

The post-mortem examination confirmed the diagnosis of subacute bacterial endocarditis.

This case brings out several important points: first, if we had been able to make this patient cooperate better and gotten repeated blood cultures on him when he was first seen in January, 1945, we could have established a diagnosis of subacute bacterial endocarditis at that time; however, neither Dr. Cavedo nor I could make this patient cooperate. Secondly, on the patient's admission to the hospital in November his joint symptoms led us to believe at first that he had a recurrent rheumatic fever infection. A blood culture should have been obtained immediately; however, this was not done until several days after admission. Four positive blood cultures were obtained showing an unidentified type of streptococcus, but unfortunately these were not reported until after the patient had had his cerebral accident, hence penicillin was not started. In going back over this case, it would, of course have been much wiser to have insisted that the patient go into the hospital when he was first seen and to have then started him on penicillin had we been able to confirm the diagnosis of subacute bacterial endocarditis.

Case III.—Mrs. E.F.L., white woman, aged 38; seen first November 7, 1947. The patient came in with the chief complaint of pain, fever, nausea, cough, and pain about her heart, duration six months. This patient did not remember any definite joint pains as a child; however, she stated that she had tonsillitis and sore throat most all of her life; she also had had a few nose bleeds. She had had known heart trouble for the past seventeen years. The patient's family doctor had given her penicillin off and on for the past several months and she has noticed that if she goes without penicillin for three or four days she will run an elevation of temperature up to 103, and then, if she takes penicillin, in twenty-four hours time her temperature will become normal. She has tried this on repeated occasions.

This patient was in Sheltering Arms Hospital for two weeks under observation six months before I saw her and the diagnosis of subacute bacterial endocarditis was suspected but not proven.

Blood culture on 11-14-47 showed streptococcus grown in broth; plates made no growth. This was repeated on 12-29 and a similar report was obtained.

In view of the above data a definite diagnosis of subacute bacterial endocarditis caused by streptococcus of undetermined type was made, this being engrafted upon a chronic rheumatic heart disease with aortic regurgitation and stenosis and mitral stenosis and regurgitation, and a possible congenital heart disease with interventricular septal defect was considered.

This patient was admitted to the Sheltering Arms Hospital and her family doctor, Dr. E. E. Haddock, treated her with pencillin 50,000 units every 3 hours. This patient completed her sixth week of treatment and so far as we can tell she has been cured and has remained so. She will, of course, be followed along carefully with frequent cultures, white counts and sedimentation rates.

Case IV.—Mrs. G. B. S., white woman, age 36. This patient was first admitted to the Grace Hospital on May 16, 1947. She stated that she had had a tooth pulled in March, that is, about seven weeks before. Since that time she had been having chills with fever, joint pains, headache and general weakness. She stated that her doctor told her when she was 9 years old that she had a "leaking heart" and must rest a lot. There was no history of rheumatic fever manifestations.

The patient's temperature, pulse, and respiration remained within the limits of normal during her eleven day course in the hospital. She showed a definite anemia. Several blood cultures were negative; one blood culture collected on 5-15-47 showed hemolytic streptococcus. On this admission the patient was given 3,200,000 units of penicillin. The final diagnosis was anemia secondary to unknown cause.

This patient was readmitted to the Grace Hospital on June 20, 1947, and during this admission I saw her in consultation with her family physician, Dr. W. Richard Morton.

Physical Examination: The blood pressure was 100/60 in the left arm and 120/70 in the right arm. The aortic second sound was very faint; there was a definite to and fro machinery like murmur heard best in the second and first interspaces just to the left of the sternum; this murmur was transmitted upward and out somewhat towards the left shoulder. At times this murmur was not as marked as at other times. The sounds at the apex seemed normal. There were no thrills and no friction rubs.

Abdomen: The spleen was not felt.

Extremities: There was no cyanosis, no clubbing; I thought I saw a splinter-like petechia in the right thumb nail.

It was my opinion that this patient had a patent ductus arteriosus and that she had a streptococcus subacute endarteritis located in the lumen of the patent ductus arteriosus. I felt that the patient had had a relapse and, as is well known, endarteritis of the ductus is very difficult to cure even with penicillin.

This patient was put on penicillin and received 11,700,000 units intramuscularly.

Dr. Bigger operated on this patient on August 7, 1947.

The patient got along very nicely during the operation. It was interesting to note that both the systolic and diastolic pressures went up as the patent ductus was ligated and, following this, the diastolic remained higher than before. She ran a fairly uneventful post-operative course. She did have some accumulation of blood in the left chest and had a thoracentesis. On discharge her red count was 5,300,000 and the hemoglobin was 98%.

This patient has gotten along very nicely and has been back at work for several months. I last saw her in my office on February 27, 1948.

Treatment: As has already been stated, the treatment has changed greatly in recent years. Previously, many and varied types of combinations of treatments were tried without benefit. Many fads came into popularity and then faded out. The prognosis remained the same—supposedly 1 in 100 cases recovering, the other 99 dying.

White and Kelson in 1939 first introduced the use of the sulfonamides (sulfapyridine) combined with heparin. This was indeed one of the greatest advances in the treatment of this previously highly fatal disease. Penicillin was soon after tried and now the method of choice of treatment in the vast majority of cases of acute or subacute bacterial endocarditis is penicillin. In some cases, for example, B coli or hemophilus para-influenzae, streptomycin should, perhaps, be tried alone or in combination with penicillin. Many reports have occurred in the last several years dealing with techniques of treatment and results obtained in various series of cases. We shall have to await the results of cooperative groups from various large centers before drawing final conclusions. Christie, for example, reports that 147 cases of subacute bacterial endocarditis were treated with penicillin and 50 have died, 81 are apparently cured, and 16 were still under treatment.

Morgan Jones *et al.* report from the literature 406 cases treated with penicillin with 266 alive and free from infection. Wagner, in a recent and excellent analysis of the literature, reports, of 521 cases of subacute bacterial endocarditis treated with penicillin, clinical cure was obtained in 371 patients (71.3%) and these have remained well. In an additional 95 cases (18.2%) an apparent cure was recorded in the hospital, but these patients had a recurrence of the disease and died within four months. There were 55 cases (10.5%) remaining, who were complete failures. Chester Keefer recently reported that, in general, 65 to 85% of cases of subacute bacterial endocarditis treated with penicillin recover. Roughly, 22% of the cases are back at their former occupations. 11% of the whole group died and, of this 11%, 70% died of congestive heart failure; cerebral embolism and kidney complications were next as the cause of death.

These results are certainly encouraging, and should cause us to keep on the alert and have a "high index of suspicion" in dealing with cases of indefinitely symptomatology and slight fever, and more especially if there is any evidence suggestive of valvular heart disease.

The outlook of patients with acute bacterial endocarditis is still not so encouraging. Wilhelm *et al.* reported 8 such cases treated with penicillin; 3 with staphylococcic endocarditis recovered, while four patients with staphylococcic and one with pneumonococcic endocarditis died.

In my opinion there is not as yet, and probably

XUM

never will be, any standardized method of procedure in the treatment of acute or subacute bacterial endocarditis. Some cases are apparently cured by rather small doses given for about fifteen days. However, this is certainly a risky procedure for such a deadly disease. Wagner reports 30 cases receiving daily dose of 100,000 to 200,000 units for 14 to 21 days with a clinical cure for 56.1%, whereas, in 46 cases receiving 300,000 to 500,000 units per day for 28 to 36 days, the clinical cure was 87.5%. The above figures certainly point out the necessity of large doses given over an adequate number of days.

Before starting treatment of these cases, one should, if possible, determine the exact causative organism and the sensitivity of its causative organism to penicillin *in vitro* within a range of 0.1 to 1 unit per cc. If the organism is one which we would expect to be sensitive to streptomycin but not to penicillin, the sensitivity to streptomycin should be determined. The dosage of penicillin should be adjusted somewhat in relationship to the sensitivity of the infecting organism. The blood level of penicillin should exceed by several times that level shown *in vitro* as necessary to combat the organism. I should like to point out that I fully realize the difficulty of obtaining tests of penicillin sensitivity and penicillin blood levels in certain circumstances. The above suggestions are idealistic. In my opinion it is most important to first make sure of your diagnosis and then start immediate treatment, especially in cases of acute bacterial endocarditis occurring as a complication of other acute diseases. I believe it is now the concensus of opinion that it is best to give the usual case of bacterial endocarditis 500,000 units of penicillin daily for a minimum of 28 days. There are numerous opinions in regard to the method of choice of administering penicillin. Perhaps, in a hospital the continuous intravenous drip method in which the penicillin is given in 1500 to 2500 cubic centimeters of 5 per cent glucose or normal saline is best. However, it has obvious drawbacks, and thrombophlebitis is certainly one. Some prefer the continuous intramuscular drip method, probably most often used is the ordinary intramuscular method. Careful studies of the plasma penicillin show at the end of 2 hours that, for practical purposes, none of the drug remains after a single injection. Therefore, if this continuous drip method is not used, the method of choice would be to give equal amounts of penicillin suspended in 1 cc. of fluid on the hour, every hour of the twenty-four hour day. If the patient's condition does not improve when he has been kept on this routine for 28 days, 1,000,000 units should be given daily for another 28 days. Some cases will require even more penicillin, and, again, it must be remembered that each case must be treated individually. Some observers feel that the use of 300,000 units of penicillin in beeswax or peanut oil is wise; in certain circumstances one might have to make such a compromise, but I would not recommend it as a method of choice.

It is difficult to decide when a given patient is "cured". A negative blood culture does not necessarily indicate a cure. I believe that if, after such a 28 day course of treatment, the patient appears to be without infection clinically, numerous blood cultures, negative, the white blood count and sedimentation rate being normal, we would be justified in discounting treatment and pursuing a course of watchful waiting with frequent check-ups.

Caronamide (Staticin Caronamide — Sharp & Dohme) has been used in conjunction with penicillin in the treatment of subacute bacterial endocarditis. Caronamide is a compound of low toxicity, which is capable of suppressing the excretion of penicillin by the renal tubules. Eighty per cent of penicillin is excreted through the renal tubules, whereas the caronamide is supposedly excreted in the urine by glomeruli filtration. Thus, by suppressing the excretion of penicillin by the kidneys, caronamide causes definite increase in the concentration of plasma penicillin. The dose of caronamide has not been standardized, and possibly never will be; the amount necessary in a given patient apparently varies from day to day. Boger *et al.* suggest that plasma caronamide concentrations of 20 to 30 mgms. approximate that required to inhibit penicillin excretion by normal renal tubules. The dosage may vary from 4 to 24 grams per day in divided doses. Concentration of plasma penicillin obtained must be the deciding factor; however, it has been satisfactorily demonstrated that a much higher concentration of penicillin can be obtained by the additional use of caronamide than by penicillin alone in those difficult cases in which it is necessary to obtain such a high concentration of penicillin to successfully combat the disease.

Since caronamide has to be given in rather large

doses to be effective, and since it is excreted by the kidneys, the necessity of maintaining a large urinary output, preferably alkaline in reaction, can be readily understood.

Time will not permit discussion in detail of the general methods which should be used in treatment, such as rest, high caloric and high vitamin diet, iron, and at times transfusion of whole blood. The complication of congestive failure should be treated with digitalis, ammonium chloride, aminophyllin and mercurial diuretics.

As you can see, I have not attempted to present cases showing 100% cure. One case presented was of acute bacterial endocarditis seen before the advent of sulfonamides and the anti-biotics, which made a rather rapid lethal exodus; the results might still be the same if we were to see such a case today. Another case pointed out the difficulties and importance of the differential diagnosis of reactivation of a rheumatic fever state and subacute bacterial endocarditis. The other cases were presented because of certain unusual features which they showed.

Professional Building.

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Better Vision of Television.

These suggestions should help television fans see programs better and prevent eye fatigue. *The Journal of the American Medical Association* (April 23 issue) said in answer to a query.

1. In general, a large screen is considered better than a small one, because it allows clearer vision at a greater distance and gives a larger visual angle.

2. A distance of 10 feet or more away from the screen would, in general, be better than a shorter distance, provided the size of the screen and of the room would permit.

3. The nearer perpendicularly the screen is viewed, the better. Too much of an angle produces distortion and makes coordination of the two images received by the eyes difficult.

4. Although there is not a definite time limit for watching television, some discretion should be used, and it should not be persisted in beyond the point of fatigue.

5. Daylight screens, in general, are considered better than the ordinary ones because they are compatible with more light in the room, thus reducing the contrast between screen and surrounding objects.

Although television in itself does not produce eye strain, it requires all the important "components of the visual act," and patients often complain of fatigue after relatively short periods, *The Journal* said. People with eye defects are especially likely to notice fatigue.

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INTRATHORACIC HOUR-GLASS GANGLIONEUROMA A CASE REPORT

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The hour-glass, or so-called dumb-bell tumors, of the chest have assumed a more important role in recent years with better methods of diagnosis. Although the reports of this type of tumor are infrequent, it probably is not as rare as it seems to be.[3,8] It occurs often enough so that it should be considered in all cases presenting signs of cord compression. The purpose of this report is to present a case of a large intrathoracic dumb-bell ganglioneuroma which had signs of cord compression without pain or symptoms referable to the chest. There will also be a brief discussion of intrathoracic hour-glass tumors with particular emphasis on the ganglioneuromas.

Loretz in 1870 first described the hour-glass tumor involving the spine and posterior mediastinum.[4] It was successfully removed and found to be a ganglioneuroma. Heuer in 1929 collected fifty-nine cases of hour-glass tumors of the spine and added three of his own.[1] Thirty-seven of these were intrathoracic. Naffziger in 1933 reported fifteen more, seven of which were intrathoracic.[3] In 1944 Kent *et al.* collected one hundred and five intrathoracic neurogenic tumors from the literature and eighteen of these were of the hour-glass type with six being ganglioneuromas.[8]

These neurogenic tumors arise from nerves, ganglia, or the sympathetic chains and are of hour-glass shape. The smaller portion of this hour-glass tumor occupies the spinal canal and compresses the cord and the other larger portion projects into the posterior mediastinum, the two being connected by a pedicle usually through an intervertebral foramina.[8,9,10] They vary in size from small lesions to the neoplasms of the size of a grapefruit. They are usually hard, well encapsulated, elastic tumors that cause enlargement of the intervertebral foramina by pressure atrophy and may even cause partial destruction of the laminae, bodies of vertebrae, or adjacent ribs.[10] The ganglioneuroma's origin is presumably from the dorsal sympathetic ganglia, and they grow through the intervertebral canal into the spinal canal as well as into the mediastinum.[1,4,7] This tumor is a rare slow growing benign neoplasm composed of well differentiated adult nerve ganglion cells occurring singly or in groups, delicate nerve fibers, and connective tissue.[4,7] The other types of neurogenic tumors are neurofibromas, fibromas, neurinomas, neurilemmoma, sympathicoblastomas, neurogenic sarcomas, and neurofibrosarcomas.[1,4] Hour-glass tumors can also arise from vertebral ligaments, cartilages, ribs, dura, and fascia, but these will not be considered here.[1,3]

Kent *et al.* reported that 37 per cent of all primary nerve tumors of the thorax which he reviewed had undergone malignant change, and that 41 percent of this type in the Barnes Hospital, St. Louis, were malignant.[8] Consequently, it is apparent that primary nerve tumors are dangerous. Once malignant degeneration has occurred the case is usually hopeless.

Clinically, the presenting picture is usually that of the cord compression syndrome with symptoms averaging from four months to two and one-half years in duration.[3,10] The history is frequently that of a gradually progressing spastic paralysis of the lower extremities associated with sensory disturbances. Pain is present in about 35 per cent of the cases and usually is due to the intraspinal portion of the tumor causing root pains.[1,3] The chest symptoms are rare and are due to pressure on the adjacent mediastinal and lung structures. A careful neurological examination will usually reveal pyramidal tract signs, sensory disturbances with an upper level of anesthesia, and occasionally bladder and rectal sphincter involvement. Occasionally an area of dullness can be detected posteriorly along the vertebra. X-ray studies will usually reveal a mediastinal mass, enlarged intervertebral foramen, and pressure erosion of the adjacent bony structures. Sometimes the tumors are accidentally picked up on routine chest x-rays, at operation for cord tumors, or at autopsy. All cases with cord compression symptoms should have a chest x-ray, for, occasionally, after a cord tumor is removed, it will

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recur from an undiscovered pedicle of a dumb-bell tumor. A lumbar puncture will usually reveal an elevated spinal fluid protein and often a positive Queckenstedt test.

The treatment is surgical and now in the days of improvements in anesthesia and surgical techniques, surgery of the mediastinum is relatively safe.[5,8,9,10] No attempt will be made to go into surgical technique other than to say that, according to most reporters, the intraspinal tumor should be removed first, particularly with cord symptoms.[3,8,10] Often at the same time the mediastinal portion can be removed, although surgeons sometimes delay removal for a few days.

The following case of an intrathoracic dumb-bell tumor occurred recently at the University of Virginia **hospital.**

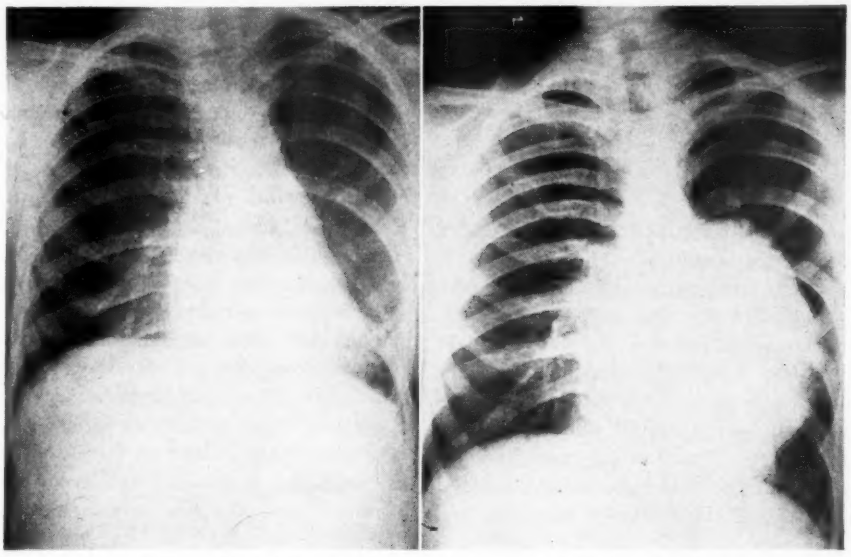

Fig. I.—Chest X-rays before and after surgical removal of the hour glass tumor.

CASE REPORT

A 14 year old white school boy was admitted on March 29, 1948, with the chief complaint of weakness in his legs of three weeks duration.

This boy was in good health until three weeks prior to hospitalization when he began to notice a stiffness of his right knee which was soon followed

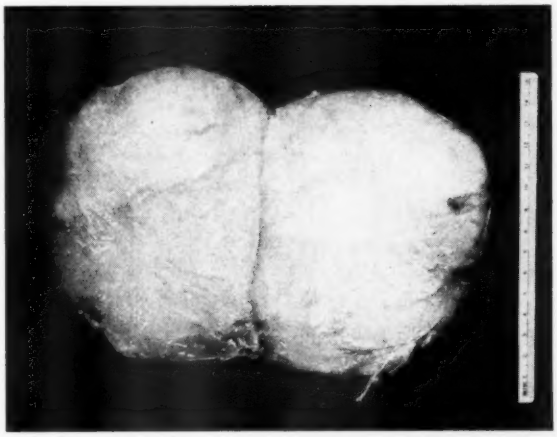

Fig. II.—The Mediastinal portion of the hour-glass tumor (opened).

by the same sensation in his left knee, ankles, and feet. Shortly thereafter he became aware of a progressive weakness in both lower legs associated with numbness that progressed to the point where the weakness involved his entire legs and back. There was no involvement of his upper extremities and at no time did he have any pain or chest complaints. One week before admission he could not walk without being assisted because of difficulty with balance and weakness. He was referred to this hospital for diagnosis and treatment.

Physical examination on admission revealed a well developed and nourished young male in no acute distress with a temperature of 99.2, pulse 80, and blood pressure of 100/60. His pupillary reflexes and fundi were normal. His tonsils were somewhat enlarged with a few pustular crypts. A chest examination was negative except for a slight degree of dullness in the left lower chest below the scapula adjacent to the vertebra with a slight suppression of breath sounds over the same area. There was a slight degree of scoliosis of the mid-dorsal spine but there was no tenderness along the dorsal or lumbar spine. Examination of the heart and abdomen was normal. A neurological examination revealed the following findings: There was a moderate degree of weakness with spasticity of both legs. He was unable to walk without assistance and had a spastic gait. The Romberg test was positive. His deep knee and ankle reflexes were very hyperactive with an associated sustained clonus. The abdominal and cremasteric reflexes were absent and the Babinski was positive bilaterally. The Oppenheim and Gordon signs were negative. There was a decrease in pain, temperature, and position senses below the knees, more marked on the right. His vibratory sense was almost completely absent below the knees and was impaired to a level as high as the iliac crests. There was no difficulty with bladder or rectal sphincter tone. A visual field examination was normal.

The laboratory data was as follows: His urine was normal and he had a 12,800 WBC with a normal differential count. He had 4,700,000 RBC with 14.5 grams of hemoglobin. The blood and spinal fluid Wassermanns were negative. His sedimentation rate was normal and a stool examination was negative. A lumbar puncture revealed a pressure of 180 mm. of water and 15 cc. of a clear colorless fluid was removed. The studies of this fluid were normal except for a total protein of 150. When this procedure was repeated four days later, it was found that after removal of 5 cc. the flow became extremely slow suggesting a partial block.

A chest x-ray revealed a large rounded homogeneous mass with well delineated borders measuring at least 14 cm. in diameter extending out from the left hilus and cardiac shadow, which in the lateral view occupied the posterior mediastinum. There was a slight left lateral scoliosis of the mid-thoracic vertebrae and there was a suspicious pressure erosion in the paravertebral area of the eighth and ninth ribs on the left. The lumbosacral x-rays were normal.

After the discovery of this huge mediastinal mass, it was felt that the patient might possibly have a dumb-bell type of tumor with extension through the intervertebral foramen and causing compression of the cord. He was seen in consultation by the Neurology, Neurosurgical, and Chest Surgery services who felt this was the case, and surgery was planned. Because there was a possibility of malignancy, it was decided to remove the thoracic portion first and a few days later to remove the spinal tumor.

On the thirteenth hospital day a thoracotomy was carried out and a large, firm, easily freeable tumor about the size of a grapefruit was located in the left posterior mediastinum. A careful dissection revealed a projection of the tumor into the foramen between the seventh and eighth vertebrae. An attempt was made to gently enucleate the mass entering the foramen, but this was unsuccessful so it had to be amputated at that point. The patient stood the procedure well but in the next few hours it was noted there was a rapid progression of the weakness of his legs resulting in almost complete paralysis. It was felt that this was probably an edematous reaction of the remaining portion of the hour-glass tumor causing further cord compression. The following morning a laminectomy was performed on the seventh, eighth, and ninth dorsal vertebrae and an encapsulated epidural tumor about 2 x 4 cm. was found compressing the cord. This tumor was traced to a tremendously enlarged intervertebral foramen between the seventh and eighth vertebrae and was removed in its entirety.

Microscopic studies of the tumor revealed fairly loose connective tissue in which were enmeshed numerous ganglion cells and occasional non-myelinated

nerve fibers. The diagnosis was a ganglion neuroma.

He had an uneventful postoperative course with a gradual return of a large part of the function of his legs, his convalescence being assisted by physiotherapy. At the time of discharge the patient was able to move his legs quite well and the position sense in his toes had returned. The patellar reflexes were still hyperactive and an ankle clonus was still present. The Babinski reflexes were still positive. It was thought that the eventual outcome would be favorable although complete return of function was not expected.

The final diagnosis was an hour-glass ganglioneuroma of the chest and spine. He was discharged May 13, 1948, after six weeks of hospitalzation to carry out physiotherapy and muscle re-education at home. A subsequent examination three months later revealed that he was able to walk quite well with the aid of a cane and could walk a short distance without one.

DISCUSSION

Hour-glass tumors of the spine occasionally give only symptoms of cord compression and consequently can only be detected by adequate x-ray studies of the chest and spine. This case illustrates such a picture, for at no time did the patient have any pain or chest symptoms. Should the spinal portion be removed without further investigation and a dumb-bell tumor overlooked, the tumor will recur. Surgical removal of these tumors is the only treatment, for x-ray is valueless.[8] In removing an hour-glass tumor, the spinal portion should always be removed first. The surgical trauma of tugg'ng and pulling that will occur when the chest portion of the tumor is removed first will be transmitted through the pedicle to the spinal portion and cause a reactive edema and swelling with resulting greater insult to the cord. In a great many of these dumb-bell neoplasms both portions can be removed at the same operation.[10] Surgery should be carried out as soon as possible after the diagnosis is made as 37 to 41 per cent of these neurogenic tumors of the chest have been found to be malignant.

SUMMARY

A case of an intrathoracic hour-glass ganglioneuroma has been presented whose symptoms were those of a compressing lesion of the dorsal spinal cord without pain and discovered by x-ray. It was successfully removed and the function of the lower extremities was for the most part restored.

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XUM

HEMOSTATIC ABSORBABLE OXIDIZED CELLULOSE IN TRAUMATIC INJURIES*

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A new aid to surgery, oxidized cellulose is prepared from gauze or cotton by a special process which converts the unoxidized cellulose into cellulosic acid[1] which is an absorbable, hemostatic chemical. This substance causes prompt hemostasis when applied to oozing surfaces and active bleeding, and, when left in contact with incised tissues, it is readily absorbed. Oxidized cellulose is pliable and easy to pack into bleeding wounds because, when wet with blood, it becomes sticky and swells, forming a dark brown gelatinous mass. This substance is used in many surgical procedures by direct application to the bleeding surface. To control brisk bleeding, pressure is also required in addition to the oxidized cellulose. It must be remembered, however, that all bleeding points should be ligated in accordance with approved surgical technique. When used within incised organs or visceral beds, wounds may be closed without drainage. Except when used for emergency hemostasis, this hemostatic agent is not recommended as a surface dressing for open wounds.

MODE OF ACTION

Oxidized cellulose was first prepared by Kenyon and his associates[2,3], and has been studied to determine if it has any irritating properties and its rate of absorption from tissues, both human and animal. Using a special technique, Frantz and associates[4] found that oxidized cellulose placed in connective tissue, muscle, bone, serous and synovial cavities, brain, thyroid, liver, kidney, and spleen, was completely absorbed. This absorption time depended on four factors: the amount of material placed in the tissue; the extent of operative trauma; the amount of blood present; and the presence of infection. Gruhzit and associates[5] have described the disintegration and absorption of oxidized cellulose as follows: "When implanted in tissue or when in contact with tissue fluids or blood, oxidized cellulose forms a coagulum. In this manner it produces local hemostasis. Following the initial hemostatic effect it is quickly changed into a dark brown soft mass, which, in turn, becomes a jelly-like colloidal material. Subsequently, the jelly like mass becomes thin, forming a water-like, pigmented fluid, which either diffuses or is taken up by phogocytosis into the general tissue fluid circulation." Franz[6] states that no appreciable clot forms in the meshes of the gauze. Gruhzit[5] states that at the point of implantation a nodule or cyst is formed which is surrounded by a coagulated tissue membrane. As the material becomes lysed and absorbed, the coagulum is surrounded by a fibroblastic zone with large monocytic invasion. Absorption is followed by some connective tissue scar formation. Frantes and Lattes[7] observed no inflammatory reactions following the implantation of oxidized cellulose unless associated infection or foreign bodies were present. Oxidized cellulose when implanted in bone[7], due to its acidity, causes a slightly delayed formation of callus. There is no delay, however, if, after hemostasis is obtained, the material is removed in three or four days. The hemostatic action seems to depend on the formation of a coagulum consisting of the salts of polyanhydroglucuronic acid and hemoglobin. This is readily demonstrated in vitro[7]. Also, a contributing factor present is the ability of the oxidized cellulose to swell when moist with tissue fluids, which makes it very useful as a packing agent, as it adapts itself to wound spaces.

CLINICAL USES IN ELECTIVE SURGERY

In general surgical and neurosurgical operations, this hemostatic agent is not removed before closure of the incision. Delayed healing or unexplained febrile reactions do not occur. In otolaryngologic operations it is removed the fifth post-operative day by means of a suction cannula. Franz[6] states "Since the report of our first seventeen clinical trials we have had an opportunity to study more cases and to hear informed reports from investigators in other hospitals. In two of one hundred fifteen cases which came to autopsy, one three days, and one three months after operation, we have had the opportunity to confirm our belief that the reaction in human tissue is similar to that in experimental animals,

*Read before the Buchanan-Dickenson County Medical Society at its October, 1948, meeting.
Dr. Johnston was recently located at Grundy, Va.

and that the material is absorbable and non-irritating". Frantz and Lattes[7] review two hundred and eighty (280) operations using oxidized cellulose in the following conditions: Partial hepatectomy, liver biopsy, retroperitoneal tissue, infected wounds, bone, biopsies, amputations, thyroid, tooth sockets, nasal cavity, tonsillectomy, rectum, prostate, kidney, circumcision, vaginal wounds, urinary bladder, and neurologic. It should be remembered that any hemostatic agent is not a substitute for ligature or suture and that the greatest field of usefulness for these materials is where ligature or suture does not adequately control hemorrhage or can not be used.

There are times when the surgeon cannot control the oozing and he would have to try to clamp or suture blindly, which is a very dangerous procedure. Oxidized cellulose is especially appropriate for this occasion. Again, gauze packs which must be removed are frequently used to control massive venous hemorrhage. When hemostatic agents are used there is no need to remove this absorbable material and thus the danger of secondary hemorrhage is removed. These absorbable agents are remarkable in radical resections where blood loss is great. They keep the loss of blood to a minimum and allow an operation to be performed where blood for transfusions is not available in large amounts. Thus, conservation of blood by hemostatic agents which are absorbable, holds much promise.

Experimental work by Jampolis and associates[8] show that with these valuable new absorbable hemostatic agents there will be a widening of the scope of operative surgery, especially in the field of vascular and cardiac surgery, and in the operative attacks on malignant tumors.

CLINICAL OBSERVATIONS IN TRAUMATIC SURGERY

Hemostatic agents have made it possible for major surgery to be performed with a greater degree of safety to the patient than previously. This is especially true in smaller hospitals where professional assistance is at a minimum. The following clinical applications are similar to those previously reported with the exception of the use of hemostatic absorbable oxidized cellulose in traumatic cases instead of in elective surgery.

Case 1.—10143, I. S., white male, admitted 11/21/46 with a stab wound of the abdomen. A tear in the mesentery was closed. Puncture wounds of the stomach and ileum were purse-stringed. A laceration of the thoracic duct was found, sutured end to end, and cuffed with oxidized cellulose. A retroperitoneal hemorrhage was packed with the same material. The patient made an uneventful recovery. It is believed that the oxidized cellulose assisted in renewing the continuity of the thoracic duct and controlled the retroperitoneal hemorrhage. A follow-up of this patient revealed perfect healing, symptom-free and he is back at work in the mines.

Case 2.—10205, J. H., white male, admitted 12/26/46 with two thoraco-abdominal stab wounds, left side, as well as two large lacerations of the back and arm. Hemorrhage was active and oxidized cellulose was applied to these wounds to control bleeding while the thoraco-abdominal surgery was performed. Oxidized cellulose was applied to a laceration of the spleen and pressure maintained for three minutes. Upon release of pressure the oxidized cellulose remained firmly adherent to the spleen and the hemorrhage was under control. The hemostatic material was removed from the lacerations and they were sutured. The oxidized cellulose retained body fluids by being placed in the lacerations while the thoraco-abdominal surgery was performed, and also controlled the hemorrhage from the spleen without having to further shock the patient with a spleenectomy.

Case 3.—10830, D. M., white male, admitted 8/3/47 with a penetrating bullet wound, transversely through the upper abdomen. Perforations of the stomach and small intestines were repaired, and profuse bleeding from the liver controlled by packing oxidized cellulose in the wound of entrance and exit. Follow-up of this patient revealed him back at his occupation of mining.

Case 4.—11376, R. S., white male, admitted 5/10/47 with a stab wound of the abdomen. A perforation of the stomach and a tear in the omentum was repaired. A large laceration of the liver was sutured over a pack of oxidized cellulose, controlling the hemorrhage. The second post-operative day the patient suddenly expired. Permission for a post-mortem was denied but, from the manner of his death, it was supposed that it was due to a secondary hemorrhage.

Case 5.—10750, M. W., white female, admitted 7/27/47, following an automobile accident, with a compound, depressed skull fracture, right parietal region, with lacerations of the brain. During the operative procedure severe oozing was encountered

XUM

and the bleeding was controlled by the application of oxidized cellulose. Recovery was uneventful and the patient attended school last year and did very well.

Case 6.—11339, C. C. white male, admitted 11/7/47 with a thoraco-abdominal bullet wound. A laceration of the superior lobe of the liver was packed with oxidized cellulose and the bleeding completely controlled. Recovery was entirely uneventful except for an evisceration on the tenth post-operative day which was repaired. The patient is now working in the mines.

SUMMARY

A brief review of the literature on hemostatic absorbable oxidized cellulose has been made with the inclusion of a few cases where this material has been of inestimable value in controlling hemorrhage in traumatic cases. The clinical cases reported are actually a minor problem of hemostasis; the major problems of vascular and cardiac surgery remain to be tested clinically following excellent experimental work[8].

1.—Oxidized cellulose is completely absorbable.

2.—The hemostatic action of oxidized cellulose is rapid and complete.

3.—Oxidized cellulose causes no tissue reaction.

4.—Absorbable oxidized cellulose makes safer surgery possible in institutions where good professional assistance is not available, but where the surgery must be performed.

5.—Oxidized cellulose is an excellent aid in controlling hemorrhage in traumatic as well as in elective surgery.

6.—Late experimental work has shown that the use of hemostatic agents will widen the scope of surgery, especially vascular and cardiac surgery, and procedures on malignant tumors, where large amounts of active bleeding may be present.

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COOK, HENRY WIREMAN, and BRIGGS, JOHN BRADFORD: Clinical Observations on Blood Pressure. Johns Hopkins Hospital Reports 11:451,1903. Drs. Cook and Briggs were House Officers of the Johns Hopkins Hospital who, when the new Riva-Rocci sphygmomanometer became available, spent all their waking hours recording and tabulating blood pressures of students and patients.

Under the heading "Blood pressure observations of obstetrical cases" they recorded pressures in pregnancy, labor and in eclampsia. They found that Braxton-Hicks contractions cause a rise of blood pressure. Engagement of the fetal head causes a fall in blood pressure. Onset of labor causes an increase of the mean systolic pressure. Each contraction is accompanied by an elevation of blood pressure. "Pelvic reflex" produced by introducing the whole hand into the vagina or by traction on the child causes a marked elevation of blood pressure comparable to that produced by forcible dilatation of the sphincter ani. Eclampsia produces a marked rise and this rise is of greater diagnostic and prognostic value than the appearance of albumin.

A CONSIDERATION OF THE EFFECTS OF MINOR DEGREES OF FAILURE OF FUSION OF THE MULLERIAN DUCTS*

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The minor degrees of failure of fusion of the Müllerian ducts to be considered here are uterus subseptus, and uterus biconis unicorpus unicollis. The only detectable difference between these is that in the former no uterine defect can be felt on examining the uterus externally, whereas the latter defect can be felt as two horns—at least during the third trimester of pregnancy. Another minor defect, the arcuate uterus, can be felt to have two horns externally, but has a smooth interior and will not result in the complications under discussion.

My purpose in presenting this topic is that fate has brought it to my attention in the last year and made me realize the importance of recognizing such defects. These minor deformities are actually fairly common. Yet this has not been generally realized. Falls in 1928 recognized the incidence to be about one per cent of labor cases. Yet Hoyt Tayler wrote in 1943 that the incidence of all degrees of failure of fusion of the Müllerian ducts in obstetric patients was one in 1500. Stanley Way in 1945 reported an incidence of one in 389. In August 1947 he reported an incidence of one in 78 cases—which he believes entirely due to the fact that he was looking for them.

This incidence, of course, means that every doctor doing obstetrics will meet such defects reasonably frequently. Since Ways series of 37 cases with 78 pregnancies is large, I shall quote his incidence of complications:

Transverse lie	27%
Abortion	26%
Retained placenta	15%
Breech presentation	9%
Premature labor	9%
Placenta previa	5%
Prolapse of the cord	5%

In addition, he says, premature separation of the placenta is common if the placenta is inserted on the septum. His combined fetal and neonatal mortality was a little over 20%. Of these, 2 babies had congenital deformities incompatible with life. He examined some of the female children who lived, by x-ray with a radio opaque medium in the uterus and found similar uterine defects in several.

However, the misfortunes of these patients are not limited to pregnancy. Some will have associated urinary tract abnormalities. Unnecessary surgery due to mistaken diagnosis, such as ectopic pregnancy, adds further to their dangers.

The following 3 cases have come under observation since August 1947:

The first patient, age 22, had had 2 full term uneventful pregnancies. She went into Sheltering Arms Hospital in labor one month before term. After a 4-hour labor she delivered spontaneously a healthy female child weighing 5 pounds 2 ounces. One hour and 27 minutes later the placenta was manually removed. It was adherent to the right side of the fundus. A septum 2 inches long was felt in the upper part of the uterus.

The second patient was treated by Dr. Edwin Rucker. She was a primigravida, age 30. She had noticed passage of blood tinged fluid 2 days previously and therefore had been referred to Johnston-Willis Hospital by her local doctor. She went into labor spontaneously three weeks before term by menses, and after a 9-hour labor delivered a baby weighing 5 pounds and 9½ ounces. Twenty minutes later the placenta had not been delivered, so it was removed manually. The interior of the uterus was found to be bicornate and the placenta was implanted in the right horn. Blood loss was estimated to be 350 cc. The placenta had a velamentous insertion of the cord. At the one month check-up no uterine abnormality could be felt.

The third case was a 20-year old primigravida. On the routine 8 months abdominal examination the baby was found to be presenting as a breech. It was easily converted to a vertex by external version. Two weeks later she complained of severe backache. The baby was lying transversely this time. Again it was easily converted to a vertex. One week later she said she had had considerable abdominal pain since her last examination. At this time the head presented but was not engaged. The cervix was felt

*Read before the Manchester Medical Society, April 6, 1948.

XUM

to be one-half inch long and admitted the tip of a finger.

Two days later—six days before term by menses—she had a large gush of what she considered to be pure blood, followed at once by labor pains. She arrived at Sheltering Arms Hospital three hours later. The intern remarked that the fundus felt as if notched. The patient was in very hard labor, bleeding only slightly. Blood pressure was 90/60. Fetal movements could be felt, but no fetal heart sounds could be heard. The patient's hemoglobin was 55%. Transfusion was immediately made ready but not given. A sterile vaginal examination showed the cervix to be 6 cm. dilated and no placenta could be felt. Two hours and 40 minutes after admission the baby was delivered through the completely dilated cervix as L.O.A. by low forceps, using open drop ether anesthesia. It was a stillborn female child 48 centimeters long. Following delivery the placenta appeared to be loose in the uterus and came away immediately. The uterus was relaxed as the placenta delivered and an estimated 400 cc. of blood was passed before her bicornate uterus and vagina could be packed. Following delivery her pulse was 100, blood pressure 104/70. She was given a blood transfusion later in the day because of anemia. Her postpartum course was essentially normal.

Autopsy on the infant showed only complete pulmonary atelectasis. There were no abnormalities of the genital tract.

I am sure the presence of the bicornate uterus could have been noticed before, and the transverse presentation should have made me suspect its presence. It is quite possible that the second external version precipitated a premature separation of the placenta resulting in the death of the baby. Had I noticed the defect and realized its potentialities for trouble she would have had her blood typed long before labor began and she would have been advised to spend the last few weeks in Richmond.

It becomes evident that the most important part of therapy of these individuals is diagnosis before complications have occurred. Occasionally it may be suspected from the family history. Stanley Way found that in one instance 2 sisters and probably the mother, from her history of obstetric complications, had had the deformity. It can be palpated in late pregnancy when it cannot always be noted in the non-pregnant uterus. Sometimes the fundus feels abnormally broad. The uterus tends to deviate to one side of the abdomen, according to Falls. Transverse presentation in the last month of pregnancy should certainly lead to strong suspicion—particularly in a primigravida. In addition, breech presentation, antepartum bleeding due to placenta previa, premature labor, or a history of any of these in previous pregnancies, or a history of retained placenta or postpartum hemorrhage, should bring this possibility to mind.

Having made the diagnosis during pregnancy, the need of a blood transfusion can be anticipated. Any attempts at external version of breech or transverse presentation should be eschewed. Many of the transverse presentations will convert spontaneously the day before labor, or even in early first stage, as Way emphasized. It is, therefore, unwise to decide to do a Caesarean section on these before labor begins, except where another indication is present. When labor does begin, if transverse presentation is still present, Caesarean section or insertion of a Voorhees' bag can then be decided upon, depending on the merits of the case. The possibility of severe fœtal deformity must always be borne in mind. Whether the presence of bicornate uterus should make the treatment of placenta previa tend more to Caesarean section, I am unprepared to say. Delay in separation of the placenta should be followed by manual removal of the placenta without waiting for hemorrhage to occur. Many deliveries will of course be perfectly normal.

The treatment of patients with these defects having repeated abortions has not been extensively tried. Way x-rayed 12 patients who had had 3 or more unexplained abortions, using radio-opaque media and found such a defect in 2. He removed the septum in one, only to have the patient miscarry again. He reported a case operated on by Mr. Harvey Evers after 6 abortions, who then had a normal pregnancy with a living baby. In 1926 P. Strassman, of Berlin, reported that he had operated on 17 cases. Three had had living children following this operation and one had had 6 children. The operation consisted of a transverse cut across the top of the fundus, which was then repaired by suturing so that the repaired wound was at right angles to the cut. He claimed that no uterine ruptures occurred during pregnancy or delivery. This will still be considered extremely radical surgery by most operators.

XUM

The possibility of renal abnormality should be watched for whenever genital defects are found.

In conclusion, uterus subseptus and uterus bicornisunicorpus unicollis are common abnormalities, occurring in over 1% of obstetric patients. Although these patients frequently have normal pregnancies and labors, they also very often have seriously abnormal ones. It is, therefore, extremely important to be on the alert for them.

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Medical Arts Building.

THE PHYSICIAN

CHARLES W. PUTNEY, M.D.,
Staunton, Va.

The physician is born with a desire to serve,
Seemingly having an iron nerve;
He goes night and day, through snow and rain,
Risking his own life to relieve pain.

When the anxious mother starts to weep,
The true physician can never sleep,
Until the child has obtained relief,
And the distressed mother, lost her grief.

He continues to serve, night and day,
Helping the sick in his usual way,
Unmindful of his personal gain,
Happy in relieving human pain.

He observes the patient with a smile,
Though searching for the cause, all the while.
His mind is alert and always keen,
For diagnostic signs to be seen.

Tests are made or pictures are taken,
Then his opinion is not shaken,
For all other causes tend to fade
When the diagnosis has been made.

His work continues without a pause,
For it is not hard to treat the cause.
When the treatment is well under way,
The patient then sees the light of day.

And as he recovers from his plight,
His physician is filled with delight,
Seeing him improve and gaining ground,
Makes the doctor's joy most profound.

As the doctor labors through the years,
His life is mingled with joy and tears;
Constantly dealing with life and death,
Awaiting the first or the last breath.

And when his work on this earth is done,
And he's approaching his setting sun,
He knows his efforts were not in vain,
And his conscience does not suffer pain.

His eternal joy has just begun,
Thinking of the many battles won,
Or joining his patients, gone before
With the Great Physician, evermore.

Then in the fairest kind of weather,
They can commune with God together
And talk of the things that used to be,
And dwell with Him in Eternity.

21 North Market Street.

XUM

THE RECOGNITION OF THE LATE PULMONARY RESIDUALS OF COCCIDIOIDOMYCOSIS

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and
THEODORE E. FINNEGAN, M.D.,
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Although the acute cases of coccidioidomycosis are confined largely to endemic areas in California, Arizona, New Mexico, Texas, Nevada, Utah, and Colorado, the cases of late residual pulmonary lesions of this disease are not limited necessarily by any geographical boundaries. During the war years, a large number of civilians and soldiers were exposed to the disease in the endemic areas. It is the purpose of this article to point out that these people have since returned to their homes throughout the country, and their physicians may, thus, be confronted with the late phases of this disease for diagnosis.

At the present time, the exact incidence rate of the acute disease is unknown. In some communities in the endemic areas, it has been estimated that at least 80% of the population have had coccidioidomycosis[1]. Infection may occur readily by inhaling dust contaminated with the mycelial or vegetative form of the fungus, Coccidioides immitis. The magnitude of the problem is better appreciated when it is realized that merely driving through an endemic area can result in infection[2]. It is believed that around 60% of the persons infected are initially asymptomatic or manifest such mild symptoms as to remain undiagnosed. Such cases can be demonstrated by a "change over" from a negative to a positive coccidioidal skin test. Nevertheless, actual infection has occurred in these cases. The acute infection may resolve completely or a residual pulmonary lesion may persist, to be discovered accidentally on some future examination. The remaining 40% of the acute cases have symptomatology referable to the pulmonary system, and the infection, again, may resolve completely or may leave a characteristic pulmonary lesion. In a small percentage of cases, one in 400 coccidioidal infections, the fungus is not confined to the pulmonary system and disseminates throughout the body. When this occurs, the mortality rate in some series has been found to be 50%[3].

The late residual pulmonary lesions resulting from either the symptomatic or asymptomatic initial coccidioidal infections are characteristically of two types: (1) cavitation and (2) nodule formation. These lesions must be differentiated from pulmonary tuberculosis, solitary or multiple cysts of the lung, primary and metastatic lung tumors, and bronchiectasis.

(1). *Cavitation*: During or shortly after the acute pneumonic phase of the disease, cavitation may result. Goldstein *et al*[4] observed cavity formation in 3 of 75 acute cases. When observed in the late phase of the disease, the cavity appears oval, thin-walled, and with a minimal amount or no inflammatory reaction in the surrounding tissue. The cavity may or may not contain fluid. Pathological studies have shown these cavities to be lined by chronic granulomatous inflammatory tissue[3]. This lesion may produce no symptoms. Goldstein also noted that 2 of the 3 cavities closed spontaneously after a period of 3 to 5 months[4]. On the other hand, such a cavity may remain indefinitely with no change in X-ray appearance. This lesion should not be confused with progressive coccidioidal disease but is merely a residual of the primary acute infection.

(2). *Nodule formation*: With serial X-ray examination, it may be found that the acute pneumonic process fails to resolve completely, leaving a dense, well-circumscribed nodular lesion. This lesion is hyaline scar tissue and is permanent. Jamison[5] followed 4 cases and found that nodule formation occurred in 10 days to 3 months after the initial pneumonitis. Slight decrease in the size of the nodule, and even calcification, may occur over a period of years.

Coccidioidomycosis may be expected to enter on occasions in the differentiation of pulmonary lesions. Since the late cases, as a rule, are quiescent

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and require no active treatment, a diagnosis can be made promptly and long hospitalization or bed rest avoided if a systematic investigative program is carried out:

1. *History.* Since late coccidioidal lesions can result in cases with an asymptomatic initial illness, the patient may be unable to recall any sickness which may be regarded as the acute stage of the disease. It is obvious that a positive history of having been in an endemic area is of as great value as a positive history of an initial illness. Eliciting a story of manifestations such as hemoptysis, slight shortness of breath, deep chest pain, or pleurisy will aid in establishing the date of the original infection.

2. *Chest X-ray.* In many cases, attention is first focused on the chest when X-ray examination reveals a nodule or thin-walled cavity. Serial films usually reveal little or no change. Quite frequently the appearance of the lesion is sufficiently characteristic that a presumptive diagnosis can be made from the X-ray alone.

3. *Skin test.* The use of potent coccidioidin in 1/1000, 1/100, and 1/10 dilutions as a skin testing agent is generally specific. As a rule, a 1/100 dilution is the most satisfactory for routine testing of suspected late cases. Sensitivity to coccidioidin is unrelated to tuberculin or to proteins from other acid-fast bacteria or to proteins from bacillus abortus[6]. The test is performed and read in the same manner as the tuberculin skin test and is of the same significance. A positive test indicates concurrent or previous coccidioidal infection, except in the presence of dissemination which may produce a negative test. Care must be observed that the syringe has not been contaminated previously with tuberculin. Since the antigenicity of coccidioidin is negligible, it should not be withheld for fear of evoking humoral antibodies that would interfere with serological tests.

4. *Examination of body fluids.* Sputum or gastric washings should be studied by smear or culture on Saboraud's media for the spherule or mycelial phase of the fungus. The material is collected in the same manner as a specimen for acid-fast studies. A satisfactory culture method has been described by Wilhelm[7].

5. *Serology.* This test is carried out by using the patient's serum and coccidioidin as an antigen. The precipitin test is seldom positive in the late cases. In some instances, the complement fixation test remains positive in low dilutions and is specific. Should the complement fixation titre begin to rise in the presence of a residual lesion, dissemination of the fungus infection should be strongly suspected.

The following cases have been selected from a series under observation to demonstrate some of the aspects of the late pulmonary lesions of coccidioidomycosis:

Case 1. This twenty-seven year old white male trained in the U. S. Army Air Corps in Southern California at various flying fields in the summer of 1943. He gave no history of illness at that time or since, nor was there any history of fever, hemoptysis, chest pain, weight loss, cough, or sputum (a chest X-ray in January 1943 was normal). The patient left the endemic area in November, 1943. In December, 1946, a chest X-ray revealed a 2 x 2.5 cm. cavity at the level of the 7th intercostal space in the left postero-lateral lung field about 2 cm. from the periphery (Figure 1). Physical examination was normal. There was no anemia and the sedimentation rate was normal. Tuberculin skin test was negative. Coccidioidin skin test (1/10) was three plus and coccidioidal complement fixation test was positive in a dilution of 1:4 in November, 1947. Sputum and gastric washings, including guinea pig inoculations, were negative for C. immitis and tubercle bacilli. Similar studies were carried out on a sputum specimen obtained from the left bronchus on bronchoscopic examination and were negative. In November, 1947, the appearance of the cavity was unchanged. However, in April, 1948, serial X-ray studies revealed complete dis-

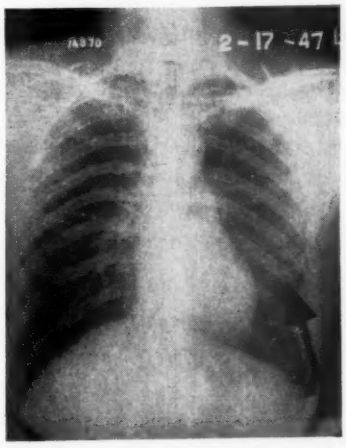

Figure 1.

appearance of the cavity, the X-ray being entirely normal.

Comment: In the absence of a positive history of an acute illness, it must be assumed that coccidioidal infection occurred while the patient was in the endemic area in 1943. Discovery of the typical cavitation was made on routine X-ray examination as the patient was entirely asymptomatic. A positive skin test and a positive complement fixation test in low dilution were sufficient to confirm the diagnosis of late coccidioidomycosis. Cavitation has been reported to close in varying lengths of time, but for such a cavity to remain as long as five years after the probable initial illness is not rare in our experience.

Case 2. This twenty-three year old white male was in Army flight training in Southern California and Arizona from April to September, 1944. A chest X-ray in August, 1944, was normal. There was no history of illness at this time or subsequently, and the patient left the endemic area in November, 1944. On May 29, 1946, a routine chest X-ray showed an annular cavity measuring 3 cm. in diameter at the level of the 8th and 9th ribs in the right lower lobe laterally and just beneath the lung periphery. The cavity was thin-walled and without evidence of perifocal reaction, as shown in Figure 2. Diagnostic studies were carried out in October

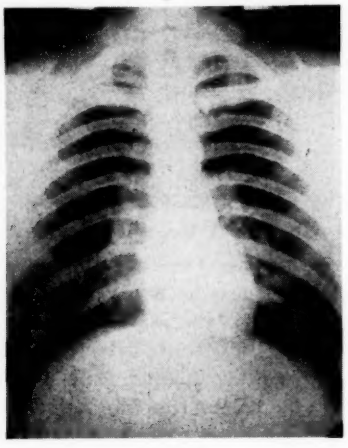

Figure 2.

1946, December 1947, and May 1948, as follows: sedimentation rate—normal, coccidioidin skin test 2+ (1/100), tuberculin skin test 2+, coccidioidal complement fixation—negative, and sputum and gastric washings for C. immitis—negative. This patient has remained asymptomatic to date and the X-ray appearance of the lesion has remained unchanged.

Comment: Assuming that the initial acute infection was incurred in the endemic area, we may estimate this cavity to be of three and one-half years duration, its definite presence being known and observed for two years. The history, skin test, and X-ray appearance are sufficient to make a diagnosis of coccidioidomycosis. Man-to-man transmission has never been regarded as a factor in this disease but such a method of spread has been suspected recently[8]. In the absence of symptomatology and of positive serological tests, this lesion may be regarded as quiescent and the cavitation may remain indefinitely.

Case 3. This twenty-six year old white male trained with the U. S. A.A.F. in Southern California in 1945. A chest X-ray in 1944 was normal. In June, 1945, while on a routine flight to Florida, he developed an acute febrile illness with physical and X-ray signs of a bronchopneumonia in the right lower lobe of the lung. Coccidioidin skin test was strongly positive but serological tests were not done. The acute illness subsided in two weeks and during the course of a month, the pneumonic process was observed to resolve slowly but left a persistent oval-shaped shadow of increased density in the right base just above the middle third of the diaphragm (Figure 3). Since that time, he has been

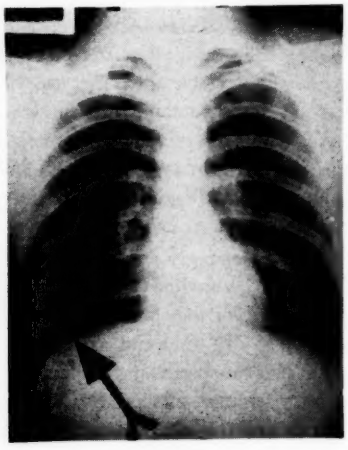

Figure 3.

asymptomatic except for an occasional complaint of mild pain under the right mid-scapula. He was re-examined in October, 1946, and March, 1948,

with the following findings: physical examination —normal, sedimentation rate— normal, coccidioidin skin test 2+ (1/100), tuberculin skin test—negative, coccidioidal complement fixation—negative, and sputum and gastric washings for C. immitis and tubercle bacilli—negative.

Comment: This lesion has been observed for approximately three years without change. Its appearance has been stable and is that of a residual nodule of coccidioidomycosis. The danger of dissemination at some future date from such a lesion has never been regarded as serious, yet it would seem advisable to follow such a lesion periodically by X-ray about every twelve months for at least five years.

Case 4. This twenty-six year old white male lived in Southern California from 1935 to 1942. He entered the Navy and continued to visit occasionally in the same area. A chest X-ray in 1942 was normal. In January, 1945, he noted the onset of a chronic cough productive of a cupful of blood-streaked sputum each day, pain in the right lower chest, and weight loss. Upon hospitalization in April, 1945, an X-ray of the chest revealed a typical coccidioidal cavity 4 cm. in diameter close to the periphery of the right lung at the level of the 7th dorsal vertebra (Figure 4a). The sputum was negative for acid-fast bacilli and the tuberculin skin test was negative. The coccidioidin skin test was strongly positive (1/00) and the coccidioidal complement fixation test was positive in a low titre. Following discharge from the Navy, he failed to gain weight, complained of fatigue, and occasionally produced a small quantity of blood-streaked sputum. In August, 1947, while under observation as an out-patient, he suddenly developed physical signs and X-ray evidence of a spontaneous hydropneumothorax on the right (Figure 4 b). There was complete collapse of the right lung and fluid to the level of the 6th rib. The fluid was a straw-colored transudate which gave a positive complement fixation test in a low titre for coccidioidal infection, as did a blood specimen. The pleural effusion and the sputum were negative for coccidioidal and tuberculous infection on culture and guinea p'g inoculation. The pleural effusion was removed by repeated thoracenteses and the lung slowly re-expanded over a period of several months (Figure 4c). The last X-ray in March, 1948, revealed the chest to have returned to its previous appearance and the cavity was unchanged.

Comment: This patient has a large pulmonary cavity as a result of previous coccidioidal infection. There has been no evidence of dissemination or of activity of the fungus. Spontaneous pneumothorax developed as a mechanical complication upon rupture of the cavity into the pleural space. Spontaneous pneumothorax is not a common complication of coccidioidomycosis but, perhaps, occurs more frequently than is recognized. A high index of suspicion may place some cases of the so-called "idiopathic pneumothorax" in this category, and all such cases should be tested with potent coccidioidin.

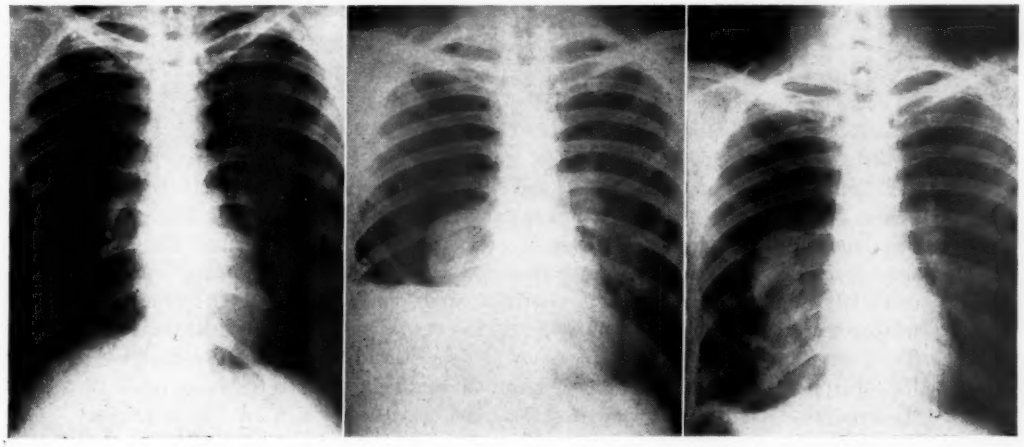

Figure 4. A, B, C.

SUMMARY

Acute coccidioidal infection has not been uncommon during the past decade in a migratory population (military and war industry workers) in the southwestern portion of the United States where the disease is endemic. Many cases were mild and undiagnosed initially but have resulted in late residual pulmonary lesions. Such lesions may now appear as diagnostic problems throughout the entire country. Long hospitalization can be avoided if the following procedures are used in the differential diagnosis of pulmonary cavities and nodules: (1) history, (2) chest X-ray appearance, (3) coccidioidin skin test, (4) coccidioidal serological tests, and (5) study of the sputum and gastric washings for C. immitis. Late coccidioidal pulmonary lesions must be regarded as *latent* and *not healed*. Periodic examination every twelve months for the first five years is believed advisable. Four typical cases, with spontaneous hydropneumothorax as a complication of one, are presented. A high index of suspicion for late pulmonary residuals of coccidioidomycosis in so-called "idiopathic pneumothorax" is suggested.

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NOTE: Dr. C. E. Smith, Stanford University School of Medicine, kindly furnished the coccidioidin used in this series, and also carried out the coccidioidal serological tests.

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Columbus, Matthaeus Realdus, (d.1559): De re anatomica libri XV. *Parisiis, Andreas Wechelus*, 1572. 495 p. 17½ cm. (M.L.)

Columbus was assistant to Vesalius and succeeded Vesalius at Padua. His book appeared posthumously in 1559. It makes better reading than that of his Master, but lacks the superb illustrations. In his chapter on vivisection he described the pulsations of the heart and noted that systole was synchronous with arterial expansion and that diastole was synchronous with arterial contraction. There has been much argument about the part Columbus played in the discovery of the circulation of the blood. To obstetricians he is interesting because he emphatically opposed the ancient idea that the pubic bones separate during labor. According to Singer the modern use of the term *pelvis* dates from Columbus. (Evolution of Anatomy, N. Y. Alfred A. Knopp. 1925 p. 140).

PRECOCIOUS PUBERTY IN GIRLS*

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"Nature wishes children to be children before they are men. If we pervert this order we shall produce precocious fruits."—J. J. Rousseau: Émile, I, 1762.

Animals, with the exception of man, pass abruptly from infancy to sexual maturity, lacking that period of childhood characteristic of the human being. But the latter has a long period of juvenile growth during which sexual development is essentially dormant. Then, at the appointed time, there is an awakening of the organs related to sex and puberty is at hand.[1,2]

The central nervous system and the ductless glands influence sexual development. There is clinical and experimental evidence that the hypothalamus is the seat of sex centers which can mediate or influence the gonodatropic functions of the hypophysis. It is suggested that the normal time of sexual development is tied up genetically with maturation of these centers, and at that time a hypothalamic-hypophyseal mechanism comes into play which either stimulates the pituitary to gonadotropic secretion or removes inhibitions to secretions which were present during immaturity.[2,3,4] The gonadotropic hormones then cause maturation of the ovaries with resulting production, sooner or later, of estrogen, progesterone, and ova. The ovarian hormones in turn bring about a maturation of the rest of the genital organs and the appearance of secondary sex characteristics.

This chain of events, resulting in puberty, normally occurs between the years of 9 and 17, there being individual, familial, and racial variations.[2] If puberty occurs before the age of 9, it is said to be precocious, and the cause and effect of this precocity will vary according to what link, if any, in the above chain is first affected. The effects, so far as the characteristics of the precocious puberty are concerned, are chiefly on the links in the chain distal to the one primarily affected.

CLASSIFICATION

Thus, one can, with exceptions, classify the cases of precocious puberty according to which of the above links is primarily affected; that is, according to the level of the primary lesion, if any, and according to the nature of the lesion, if present—(See table).

TABLE I
PRECOCIOUS PUBERTY IN GIRLS
Classification of Cases
(Modified from Seckel[2])

I. *Constitutional*
(Chromosomal or genic basis. Hypothalamic level. No lesion.)
II. *Pathologic*
A. Cephalic
(Various lesions, primarily or secondarily affecting the hypothalamus.)
B. Abdominopelvic (Hormonal).
1. Ovarian
a. Granulosa cell tumor
b. Teratomas
c. Chorionepitheliomas
d. ? *et al.*
2. Adrenal-cortical
a. Neoplasms
b. Hyperplasias
III. Miscellaneous
A. Albright's syndrome
B. *et al.* ?

In one type of case the normal mechanism of maturation comes into play spontaneously at an abnormally early age without there ever being a demonstrable lesion. The primary physiologic change in such cases occurs at the intracranial level. In these cases there is apparently a premature maturation of the hypothalamic sex centers due to an inherited factor. Novak has admirably described these cases and has applied to them the adjective "constitutional".[5] They have also been termed "primary" and "idiopathic".

On the other hand, those cases having demonstrable lesions may be called "pathologic". This broad pathologic group may be subdivided, according to the level affected, into the cephalic and the abdominopelvic groups. The cephalic group contains lesions which are, for the most part, in or close to the hypothalamus[5,6] and which apparently affect the hypothalamus or the hypothalamic-hypophyseal mechanism by actual invasion or through pressure.[3,7] They include various tumors, hydro-

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cephalus[4,6] and encephalitis.[8] All of the cases of pineal tumors associated with precocious puberty have been in males, except one; and there is evidence that the precocity in these cases is due to involvement of the hypothalamic area and not to any hormonal activity of the pineal body.[2,4,5,6,8] Nevertheless, there is some evidence to the contrary.[9,10] It is of interest that no case of precocious puberty due to primary disease of the pituitary has been reported.[2,5,8] In both the constitutional group and the cephalic group the primary change occurs at the intracranial level.

The abdominopelvic subdivision may be further divided into the adrenocortical group and the ovarian group. The adrenal disease may be either a hyperplasia or a neoplasia.[2,5,11] The primary change in this group does not fit squarely into any link of the chain given above, but may perhaps be thought of as occurring in a connecting side chain. The ovarian group consists chiefly of cases with granulosa cell tumors and rarely other tumors. Six cases of teratoid tumor of the ovary and 4 cases of ovarian chorionepithelioma producing sexual precocity are reported in the literature.[2,12] Incidentally, no cases of arrhenoblastoma occurring before normal puberty have been reported.[2] The abdominopelvic group may be called the endocrine or hormonal group, as the lesions primarily affect hormone-producing glands, thereby causing excessive endocrine secretion which brings about the sexual changes. A third major division may be called "miscellaneous" to include any conditions of precocious puberty not proven to fall in the other two divisions. Into this division may be put Albright's syndrome,[13] the etiology of which is still obscure,[14] though it has been suggested that it is due to an embryonic defect possibly of the central nervous system, which, if true, would place it in the cephalic group.[5] Here, also, might be put such cases as the one in which precocious puberty was reported to have been induced by the administration of insulin,[15] and the case of precocious puberty occurring in familial cretinism.[16] Coffey[17] states that "it has been reported that puberty may be accelerated" in achondroplasia, but details are not given. It seems that in the last three conditions the particular patients might have coexisting causes for their sexual precocity, such as a constitutional factor, unrelated to their overt diseases.

CLINICAL PICTURE

In general, the precocity is marked by acceleration of skeletal growth, enlargement of the breasts, development of pubic and axillary hair, and the onset of uterine bleeding.

Usually the most outstanding sign of female precocious puberty is uterine bleeding, which may be ovulatory or anovulatory, depending on the etiology of the precocity. In the constitutional type, the precocity is isosexual and complete (the ovary has matured), and the bleeding is ovulatory. In this type, pregnancy can and does occur. A case of the youngest mother on record is an example of the constitutional type.[18] In the cephalic type, i.e., in the cases due to lesions in or near the hypothalamus, the precocity is also isosexual and complete, and ovulation occurs. Though pregnancy may be possible in these cases, it has never been recorded. The cases in the cephalic group sooner or later show characteristic neurologic signs of their intracranial lesions. In the abdominopelvic group of cases, i.e., in those cases due to lesions at the ovarian and adrenal levels, ovulation does not occur. Consequently, in these cases pregnancy is not possible. Ovarian precocious puberty is isosexual and incomplete (the ovary is immature). Adrenal precocious puberty is incomplete and usually heterosexual, i.e., the ovary is immature, and virilism predominates. Menstruation is usually absent and pregnancy is not possible as ovulation does not occur.

In general, though there is a preliminary acceleration of skeletal growth in precocious puberty so that these patients are taller than their contemporaries, bony arrest occurs prematurely also, so that in the end they are apt to be smaller than these same contemporaries. The mental growth of the patient does not keep pace with the somatic growth and, in general, is not influenced.

In Albright's syndrome there are bone lesions and pigmentation of the skin associated with the sexual precocity.

Determination of the urinary estrogens has not been recorded in the constitutional type; in the cephalic type the urinary estrogens are within the normal adult range; in cases of granulosa cell tumor, the urinary estrogens are usually increased beyond the normal woman's range; in the adrenocortical group the urinary 17-ketosteroids or androgens are increased within or beyond the range normal for mature males; urinary gonadotropins have gen-

erally been negative in all types of cases but it is suggested that the latter in the intracranial group is probably due to methodical inadequacy. For additional differential diagnostic data the reader is referred to the table by Seckel.[2]

INCIDENCE

In 1933, Novak[19] stated that the total number of cases of precocious female puberty reported in the literature was "still well below 200". He pointed out that many of these were old cases going back as far as 1658, and on these cases there were usually little or no pathologic data. According to Novak,[5] the great majority of cases are of the constitutional type. Seckel[2] states that "if a precocious girl without signs of virilization is presented for diagnosis, her chances are (1) idiopathic type, (2) ovarian neoplasm, (3) Albright's syndrome (if bone disease is present), and (4) hypothalamic lesion . . . the first chance is greater than a combination of all the others." If she has virilism she falls in the adrenocortical group. Precocious puberty due to ovarian disease is far less frequent than the constitutional type of precocious puberty. In 1938, Parks[20] stated that a summary of the literature up to February 1936 revealed only 8 reported cases of granulosa cell tumor of the ovary causing symptoms in children under 10 years of age. Yet, granulosa cell tumor is by far the most common of the ovarian causes of premature puberty. In 1941, Lull,[21] reviewing the literature, reported that he was able to find there only 16 cases in which ovarian tumors had caused precocious puberty. Novak has stated[5] that for the previous sixty years only one case in which an ovarian tumor was responsible for precocious puberty was encountered in the Department of Gynecology at Johns Hopkins Hospital among the more than 60,000 patients treated.

Most all of the ovarian cases have been due to granulosa cell tumor. The incidence of teratomas and chorionepitheliomas has already been referred to. I have been able to find only 2 cases in which what appeared to be only a simple cyst was thought to account for the precocity. One was a case reported by Lull[21] in which the lesion seemed to be a simple follicular cyst. It was stated that in this case a granulosa cell tumor might have been present in a portion of the ovary that was not examined microscopically but was embedded in mice. The other case was reported by Mengert.[22] The nature of the tumor was not clear. Mengert reported that "it may have been a follicular cyst". The pathologist made a diagnosis of granulosa cell cyst of the ovary, but stated that ordinarily cysts of the type seen are not regarded as being neoplastic. In this connection, I am reporting elsewhere[23] an additional case of sexual precocity associated with an ovarian cyst but possibly of the constitutional type (Figs. 1 and 2).

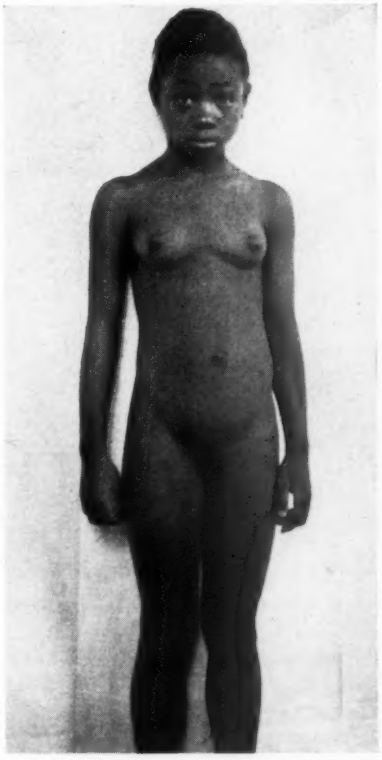

Fig. 1.—Case of Precocious Puberty reported elsewhere.[23] Menstruation began at age of 6 years, 4 months. Photograph taken prior to operation at age of 7 years, 7 months.

TREATMENT AND PROGNOSIS

The treatment of patients with precocious puberty will, of course, vary with the type of case. Where operable lesions are present, these should be removed. The prognosis in cases due to lesions of the brain is bad, whereas, in cases due to granulosa cell tumor of the ovary it is excellent. In the constitutional type obviously no operation is indicated except rarely for diagnostic purposes. Patients thought to belong to the constitutional group should

XUM

be studied and kept under observation for signs of organic disease which might indicate that the condition is in reality pathologic.

Fig. 2.—Same case. Postoperative. 21 months later than Fig. 1.

In general, all of these patients should have special psychologic management, and should be protected from sex violation, and, in cases of complete precocity, from pregnancy.

The patients in the constitutional group as a rule become essentially normal adults.

SUMMARY

1. Precocious puberty in girls is discussed and classified.

2. With possible exceptions the condition is due to an inherited factor, or to lesions of the brain, the ovaries, or the adrenal glands.

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ADULT CARDIAC REHABILITATION

NATHAN BLOOM, M.D.,
From Department of Medicine, Medical College of Virginia,
Richmond, Virginia.

In the past few years the interest in rehabilitating the child cardiac has been widespread. There are hospital beds available for rheumatic fever cases and also convalescent homes in which these children are cared for over long periods of time. This work is very gratifying and of course there is much more to be done for these children. The adult cardiac seems to have been forgotten. His problem is certainly just as important. Under adequate medical care it is not unusual to have a decompensated cardiac improved within a few days or weeks. He is then anxious to return to work, as he is the mainstay of his family and cannot afford to be idle. Although you, as his physician, realize that he should have a very long rest with rigid care, the patient's social economic status prevents him from getting this care. He returns to work and in a few weeks or months is again decompensated and returns to the hospital.

How can we properly care for these individuals over a long period of time? They are not sick enough to remain in the hospital, but they are not well enough to return to work. The convalescent homes now available are much too expensive. It is possible that in the future certain convalescent homes may be subsidized and adapted especially for cardiac patients. These will require an intelligent nursing staff, well trained in the handling of cardiacs. Competent staff physicians with knowledge of cardiac problems should be available and if necessary these patients should be taught other vocations which would be more suitable for their changed physical ability and capacity for work.

It is a terrible shock for a man to realize that he has to change his entire mode of living, especially his means of making a livelihood. He may have been an expert plumber, electrician, truck driver, or civil engineer, and all at once he is told that he must learn a sedentary occupation. This tremendous impact on his mental and economic life may have such a morbid influence on the individual that he may not be able to cope with the situation. We have known patients who have committed suicide when told that they would not be able to continue with their life's work.

These people require much attention, not only for their physical needs but also for their mental and economic requirements. There must be ways and means of helping this type of patient. We all understand the necessity for cardiac research but it is just as important that we rehabilitate the patient, reassuring him that he will eventually be reinstated into a stable life, that his family will be taken care of, and that he will be able to make a living in some sort of capacity. We realize that the future of such a program will require much thought and financial help. The set-up will have to be different from the one for rehabilitation of the child cardiac, because, if you have to take a man away from his family and his occupation for a long period of time, someone will have to take care of the family. There is no reason why we should not attempt to rehabilitate a cardiac and spend as much time with him as would be accorded a paraplegic. It is hoped that the new program of the American Heart Association will take into account the adult as well as the child cardiac. We all know there is a tremendous amount of work that must be done and probably the only way it can be done is to work out a permanent organization with individuals in charge who understand the entire problem.

1006 West Franklin Street.

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ANESTHESIA IN ITS RELATIONSHIP TO SURGERY*

A. D. HUTTON, M.D.,
Marion, Virginia.

Since my graduation from medical school I have devoted all of my time to hospital work. I have been greatly interested in anesthesia; have had several years of experience in the administration of some of the many types of anesthetic agents that are in use today, and I have had the privilege and pleasure of observing the administration of anesthetic agents in some of the larger clinics and hospitals in the East. Realizing this as one of the most neglected yet one of the most important fields of medical practice, I have chosen for my paper, Anesthesia in Its Relationship to Surgery. It is my desire to discuss anesthesia in a limited yet practical and helpful way, trying to point out some of the values of good anesthesia and the hazards encountered in the administration of a few of the many anesthetics that are now being used. It is my belief that every physician, regardless of the type of medicine he practices, should have at least a general knowledge of anesthesia, its dangers as well as its values.

It is commonly acknowledged that no other single achievement of science has done so much to relieve human suffering as the discovery that certain chemicals could be used to stop all sensations of pain during surgical operations.

It is interesting to note that the effect produced is called anesthesia, a Greek word meaning *without sensation,* introduced into the English language by Dr. Oliver Wendell Holmes, who was one of the first to recognize this great boon to humanity.

Of course, as we all know, until the middle of the 19th century surgical operations were performed while the patient was fully conscious, strapped to the operating table. Many life-saving operations could not be performed at all and human beings died by the thousands because three simple chemicals, ether, chloroform, and nitrous oxide were still practically unknown.

In 1799 or 1800 Sir Humphrey Davy, an eminent British chemist, announced experiments with nitrous oxide and suggested the use of this gas in surgery, but his suggestion went unheeded.

In 1818 Michael Faraday, English scientist and physicist, showed that ether had similar anesthetic power; but still it was not used.

In 1842 Dr. Crawford W. Long, of Jefferson, Georgia, successfully removed a tumor from a patient under the influence of ether and for years he was not given credit as he did not publish a report of this and similar operations; but there is now absolutely no doubt of the fact that he was the first man to use an anesthetic in operating.

In 1846 Dr. W. T. G. Morton, a Boston dentist, used ether in the extraction of teeth, later patenting the product under the name of Letheon. I cannot refrain from remarking here on the contrast presented: Dr. Long, modest and seeking neither publicity nor riches almost lost the fame of being the first user of anesthetics because he didn't even publish the news of the great event, while the dentist Morton actually had ether patented under a trade name!

In 1847 Dr. J. I. Simpson, a Scotchman, used chloroform for the first time and announced and demonstrated its use in Edinburgh.

It is hard to realize that just a hundred years ago there was an entire absence of that great friend of man, *anesthetics.* Or at least there was an absence of knowledge that there were certain agents that could be successfully used to alleviate pain and make all sorts of operations possible that theretofore had been passed by, the patient dying, when nowadays he could be saved without the sweat and agony of pain and shock.

The most important advances in our knowledge of anesthesia and anesthetic agents have taken place within the last twenty-five years. I am delighted to know that physicians, hospitals and medical schools are beginning to realize more and more the importance and value of good anesthesia in all fields of surgical practice. It is gratifying to learn that a new department of anesthesiology has been opened at the Medical College of Virginia to offer training to physicians who desire to specialize in anesthesiology, and to give scientific instructions to medical students, teaching them not only the scientific but the practical value of anesthesia, one of the most

*Read before the semi-annual meeting of the Southwestern Virginia Medical Society, at Pulaski, October 7, 1948.

important and neglected fields of medicine.

It is a well know fact that all anesthetic agents are administered by inhalation, regional, brachial plexis block, sacral, sympathetic, caudal, endotracheal, subarachnoid, intravenous, rectal and freezing. Which method, or combination of methods, depends on several factors, some of which are age and condition of the patient, the element of time, the type of surgery, the patient's wishes, the surgeon's choice, and the availability of an experienced and well-trained anesthetist.

The question arises, being a natural one, what type or method should be used and who should administer these powerful anesthetic agents, since all carry a certain degree of danger? Shall the busy inexperienced, untrained general practitioner, the highly educated clinician, the nervous and unstable layman, the kith and kin, the graduate and undergraduate nurse, hospital orderly, or the well-trained, experienced medical anesthetist, male or female? I am firmly of the belief and certainly advocate that all anesthetic agents be administered by one who has a clear concept of the physical as well as the physiological factors of the respiratory and circulatory systems and has had sufficient scientific training and experience in addition to his being a graduate of an A grade medical school. I realize full well that medically trained anesthetists are not always available in the smaller clinics or hospitals; nevertheless, we should make an honest effort in reaching such a goal, never losing sight of the fact that the life of your patient, my patient, is intrusted into the hands of the anesthetist, a very important and valuable member of any surgical team. This is our responsibility: what are we going to do about it?

In all cases coming to surgery, emergency included, they are entitled to and should have as a pre-operative and pre-anesthetic measure a complete examination; in other words, it is important, really I should say, essential, to determine as accurately as possible the cardio-vascular-renal and respiratory reserves as well as the metabolic state of the patient. Certainly no patient should be even considered for anesthesia and surgery until blood and urine studies are completed and there has been a check on the cardiac and respiratory systems. We are all prone at times to get into too much of a hurry and become careless in preparing our patients for anesthesia and surgery. If they are not properly prepared the risk is increased and surgery is made more difficult and hazardous. The post-operative care of any patient is just as important and even more so than the preparation of the patient for anesthesia and surgery. No patient should be left alone under any circumstances. It is important, if not absolutely essential, that a graduate nurse or some qualified person stay with patient until he or she has reacted fully. The respiration, pulse and blood pressure should be taken and recorded at regular intervals, reporting to the surgeon or physician in charge any alarming symptoms or abnormal variations of the pulse, respiration and blood pressure. One of the most important factors in the post-operative case of surgical and anesthetized patients is the preservation of body heat.

I like to give all my patients, even the very young, some type of pre-operative and pre-anesthetic medication. When possible, have the patient enter the hospital the night before the operation; light supper, give some mild sedative; any of the barbituates can be used if the patient is not allergic to this group of drugs. I usually prescribe and prefer sodium nembutal grs. iss at bedtime and at 7 A.M., repeat same dosage with morphine and atropine in proper dosage 30 to 45 minutes prior to going to surgery.

I have found and use, mostly for patients undergoing prolonged surgery and deep anesthesia, 5% or 10% glucose either in distilled water or physiological saline, 500 to 1000 cc. with insulin, prior to induction and during the surgical procedure. I like to have available whole blood and plasma in addition to cardiac and respiratory stimulants.

Every physician, I believe, should familiarize himself with the fundamentals of fluid therapy since so many patients require this form of treatment and are not financially able to enter hospitals for such treatment.

The selection of the anesthetic agent is most important. The choice, I think, should be made by the personnel of the operating team, with the clinician and the pediatrician as consultants. The wishes of the patient should be carried out as far as possible, not to the extent of course, of jeopardizing one's life. Let me mention a few of the types of cases requiring surgery, suggesting an anesthetic of choice.

For children, regardless of surgical pathology present, I prefer ether, the best-established and safest anesthetic of them all. With the exception

XUM

of chloroform, it has been used more than any other agent. No difficulty is encountered in its administration. I will admit, however, that there are a few objectionable features. The feeling of suffocation initiated at induction, the post-operative nausea and vomiting, which usually can be eliminated or certainly diminished by giving it slowly or by using a small amount of sodium pentothal as a supplementary agent, and by the proper preparation of our patients for general anesthesia. This is by far the most important factor of them all. I have found pyridoxine of value in taking care of nausea and vomiting following ether anesthesia. Dextrose in distilled water is always valuable in helping control this undesirable feature.

For operative obstetrics, some prefer local with any of the gases, cyclopropane, ethylene, or nitrous oxide with oxygen. Some others prefer low spinal, caudal; while there are still others who prefer and use sodium pentothal, with good results. Personally, I like nitrous oxide, oxygen and spray ether. It has been my observation that Cesarean babies do much better with this combination than any other anesthetic other than local. They do not require resuscitation nor do they develop respiratory grunt, and oxygen is rarely ever necessary.

In laparotomy for intestinal obstruction, perforated ulcers, colon and gastric resections, cholocystectomies and gynecological surgery, sodium pentothal with nitrous oxide, oxygen, spray ether, or curare, have been in my experience the anesthetics of choice. Patients suffering with endarteritis obliterans, arteriosclerotic and diabetic gangrene and similar conditions involving the extremities, freezing is the ideal anesthetic since those patients, as a general rule are usually weak, with low resistance. There is no shock, the operative time is shortened and bleeding is practically nil. There is some pain and discomfort to the patient with this type of anesthesia. However, pain if present can be eliminated with morphia or pantopon.

For thyroid surgery, avertin rectally, with gas, oxygen, ether; local infiltration of novocaine and pentothal sodium works in some of these cases remarkably well.

For surgery of the eye, paranasal sinuses and mastoid operations, local or endo-tracheal, with ether if necessary, appears to be the ideal anesthetic for this type of case.

I have never been thrilled with spinal anesthesia. However, it is being used successfully and extensively in many hospitals and clinics. It certainly produces excellent muscular relaxation, which all surgeons like. It is not adaptable to all types of cases; of this I am sure. If the necessary precautions are taken, it is reasonably safe. When used, I like to give the patient as a pre-operative and pre-anesthetic medication, especially in elderly people with imparied circulation, coramine and ephedrine sulphate, grs. ¾, in addition to the proper dosage of morphine and atropine. This medication keeps the blood pressure at an approved level. There have been and still are various opinions concerning the position of the head of the patient while under spinal anesthesia. Some advocate lowering of the head—in other words, placing the head in the *Trendelenburg position*—while others say that this is not necessary. Metacaine, when used, being lighter than spinal fluid, favors the Trendelenburg position, tending to decrease the mortality rate. I have no fixed opinion.

Just a word about intravenous anesthesia—with special mention of pentothal. When used, it carries a wide margin of safety as an established method of anesthesia if it is correctly applied. Since 1936 it has been extensively and successfully used in all the larger clinics and hospitals, and, I am sorry to say, in dentists' and doctors' offices. I am sure it should not be thus used. At the present time pentothal sodium is being used for too many surgical procedures without due consideration of the limitations of this drug, and, as a result, unnecessary complications are arising in certain cases of surgical intervention.

A mixture of oxygen and nitrous oxide, 50% of each, should be given with pentothal. As stated before, pentothal is especially good as a supplementary anesthesia for thyroid surgery if the gland is not causing mechanical obstruction to the respiratory tract. It does not interfere with metabolism, nausea and vomiting are usually not present, and one can use as much oxygen as required.

For minor surgery, such as application of intrauterine radium, reduction of simple fractures, dislocations, cervical cauterizations, dilatation and curettage, incision of abscesses, doing painful dressing, sodium pentothal is quite useful. When using this drug there are a few precautionary measures and conditions that should not be overlooked. Always use 2½% solution, give slowly, sufficient oxy-

gen, and with a patent airway. Never give in the dark, or following the intake of food or fluids.

There are a few contra-indications to the use of this drug: Children under the age of 10. Why? Because vital lung capacity is less than adults. It should not be used in patients with reduced breathing space; in myocardial insufficiency; pulmonary tuberculosis; bronchiectasis; bronchial asthma, nor in any case where there is an obstructive lesion of the respiratory tract, or where there is severe anemia. Lundy, of the Mayo Clinic, never uses pentothal if the R. B. C. is less than 2,000,000, and the Hgn. is less than 40.

Time does not permit a more detailed discussion of this great field of medicine, such as surgery of brain, chest, throat, urinary tract, and orthopedics. After all, you should choose whatever anesthetic you prefer or may be accustomed to using, provided the condition of the patient justifies your choice of anesthetic. They are all reasonably safe if properly administered.

In closing, let me leave you this thought, although to this group it is probably another case of carrying coals to Newcastle. Give the best that's in you, and work in harmony with your associates with only one purpose in view—that of restoring your patient to normal health and usefulness. There is a famous saying of Dean Swift to the effect that whoever could make two blades of grass grow upon a spot of ground where only one grew before, he would deserve well of mankind and be of essential service to his country. But how much nobler, how much more useful to the world, is the saving of human life through your art and zeal as a physician—with a realization of the scriptural saying, "Well done, good and faithful servant" as your reward.

Lee Memorial Hospital.

Award-Winning Army Film Available.

The Army Medical Department-Signal Corps "Oscar"-winning motion picture entitled "Toward Independence", is available on a loan basis to all military organizations, and to any non-profit civilian group. The film may be obtained from the nearest Signal Corps Film Library or, if to be used for television, by writing to the Public Information Officers in the nation's six Army Areas.

The picture portrays the program for the care of paraplegics as developed by the Army Medical Department, and details the progress of a patient first learning to move about in his hospital bed, then learning to use re-educated muscles in opening doors, climbing stairs, and driving automobiles, and other steps in their rehabilitation.

Although "Toward Independence" was made as a teaching aid in the training of medical personnel, its realism and humanism won for it the annual award of the Academy of Motion Picture Arts and Sciences, as the best documentary film of the year.

"Colds" May Be Due to Allergy.

Persons who just get over one cold when another starts or have asthma only when they catch cold may be suffering from an allergy, according to a Rochester, N. Y., doctor.

Writing in the May 7 *Journal of the American Medical Association,* Stearns S. Bullen, M.D., of the Department of Medicine, School of Medicine and Dentistry, University of Rochester, says that the majority of patients who describe such symptoms to doctors probably have allergic conditions rather than infections.

There is a growing body of evidence that the cause of periarteritis nodosa (inflammation of tissues around an artery), dermatomyositis (a condition characterized by pain and swelling of muscles and inflammation of the skin), and one kind of kidney disease may be sensitivity to certain substances, he points out.

XUM

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Timely Resolutions Effective.

Resolutions passed by an organization frequently appear to be of more significance to those outside the organization than to those within.

Even though it is assumed that the medical profession is against compulsory health insurance, a resolution to this effect by each local medical society in the state seems about the least that could be expected. It is hoped that every local medical society will have sent such a resolution to their representatives in Washington, either directly or through the state office, very soon.

A similar resolution will probably come before your House of Delegates in October, at its first meeting after *November Second.*

It will be most helpful if every member of the Medical Society of Virginia, would encourage similar resolutions at every opportunity, from business, civic clubs and other community interests.

Our State Educational Chairman, Dr. John T. T. Hundley, adds:

"Senators and Congressmen are being flooded with requests that they support the administration's Compulsory Health Insurance proposals. Those requests are inspired by the proponents of that legislation.

"We must counter that flood of propaganda. Write, and have your friends write, to your Congressmen and Senators, requesting them to vote and campaign against Compulsory Health Insurance.

"Our Congressional representatives are favorable to our cause but cannot help be influenced by the requests they receive. We must support them. Write now, and have your friends write."

Talk to Others—Not Ourselves.

If you write letters—and all of us write some—secure from your Director of Public Relations, Medical Society of Virginia, suitable material to be sent to the public with your letter or bill.

There is nothing new about a letter-stuffer—all businesses use it to some extent—and it is one method of getting our story across to the people who need to know the facts about medical legislation.

A few months ago this idea was tried by one physician, who had printed at his expense 2,500 copies of a feature article by Miss Dorothy Thompson. Permission was secured from the copyright owners. Soon, other physicians, dentists, and hospitals requested copies for similar purposes. As a result, the well-told, terse and informative article by Miss Thompson has been placed in the hands of 40,500 people by means of this single effort.

Physicians should send copies of any material favorable to our cause from newspapers, magazines, etc., to the Director of Public Relations, 1200 East Clay Street, Richmond 19, Virginia.

We must tell the story to those who need to know the truth—there is no point in talking to ourselves.

JAMES P. KING, *Councilor*
9TH CONGRESSIONAL DISTRICT
Radford, Virginia

Virginia Doctor Practicing At Eighty-One.

Dr. J. C. Cutler, 3201 West Avenue, Newport News, Virginia, will have practiced medicine fifty years this month. He was born in 1867 and graduated from Northwestern University Medical School in 1899, and has been practicing in Virginia since 1913. His eighty-second birthday will be celebrated November 9.

At eighty-one years of age, he is the oldest doctor on the staff of the Elizabeth Buxton Hospital, Newport News, Virginia, and he is the oldest practicing physician in the Virginia Peninsula.

Dr. Cutler, still quite a young man, is one of the doctors eligible for the Fifty Year Club of the Medical Society of Virginia, and is expected to be among those receiving this award during the annual meeting of the Medical Society of Virginia in October.

Dr. Cutler will fly to Evanston, Illinois, May 14, to be honored with fourteen other members of his medical class by Northwestern University.

Candidates for Governor vs. Government Medicine.

The possibility of government or political medicine having been brought to our attention in every

congress since 1939, and the seriousness of what effect this would have on the medical care of our people, it was deemed well by our council at its last meeting, to inquire of the attitude of the announced candidates for Governor in Virginia, on this subject.

In this connection the following letter was written to those who had at that time announced their candidacy. Their replies follow in alphabetical order:

MR. REMMIE L. ARNOLD
ARNOLD PEN COMPANY
PETERSBURG, VIRGINIA
DEAR MR. ARNOLD:

In view of legislation already offered in the 81st Congress, proposing a national compulsory health insurance plan, which naturally is of immediate concern to the doctors of medicine in Virginia and in this country, and

FURTHER, in view of the departure this represents from our American democratic way of life, and

FURTHER, in view of the ultimate effect this would have on the deterioration of medical education, medical research, and the kind of medical care that our people would get, and

FURTHER, in view of the effect this would have upon doctor-patient relationship, and

FURTHER, in view of the approach this would represent to a socialistic state, and

FURTHER, in view of the eventual increased cost of our medical care program, that this would inevitably lead to, and

FURTHER, in view of the many other objections that are as valid, the Council of the Medical Society of Virginia would like to have your views on this subject, and those of every other announced candidate for Governor, in order that these views may be made known.

For your information, we plan to publish the replies of each candidate in an early edition of the VIRGINIA MEDICAL MONTHLY, which goes to the membership of the Medical Society of Virginia.

J. M. EMMETT, *Chairman*
PUBLIC RELATIONS COMMITTEE

March 18, 1949.

DEAR DR. EMMETT:

I certainly do want to thank you for your letter of the 18th and I believe my stand in regard to the legislation offered in the 81st Congress, concerning compulsory health insurance, has already been made public. As a matter of fact, I talked to the Richmond Dental Society and outlined my views recently and I am enclosing herewith a copy of this speech. I believe it answers every question in your letter.

I am absolutely opposed to compulsory health insurance or socialized medicine and shall fight this with all the effort that I have.

I am a business man and I have seen the Government put on too many rules and regulations in business and I do not want to see these same things put on the medical profession which will eventually destroy it. You can depend upon me to assist and help fight this in every way I possibly can.

I certainly hope that you will support me regarding my candidacy for Governor of the State of Virginia. I believe I can give to the Commonwealth a good sound business administration, one which will be beneficial to all of its people. I believe I can effect economy and efficiency in Government and that I can stem the flow of increased taxation and we certainly do not want any more taxes, not even a sales tax.

Thanking you for giving me an opportunity to give you my views and with an abundance of good luck, good health and happiness, believe me to be,

Most sincerely,
REMMIE L. ARNOLD.

March 28, 1949.

DEAR DR. EMMETT:

I trust that you will pardon the delay in acknowledging receipt of your letter of March 18th which has just come to my attention.

I do not hesitate to state that I am unalterably opposed to what is generally termed socialized medicine. The reasons for my position are well stated in your letter. I am not familiar with the details of the Legislation proposing a National Compulsory Health Insurance plan, but from what I know of it it appears to be at least a long step towards socialized medicine, and I certainly do not favor it.

Thanking you for writing me, and with my personal regards and with best wishes, I am,

Cordially yours,
JOHN S. BATTLE.

April 1, 1949.

DEAR DR. EMMETT:

I am glad to have your inquiry of March 18th of my views with respect to Government medicine. Furthermore, I would welcome any opportunity to discuss in detail with the members of your profession and with the lay public the real tragedy that would result from any system of Government or political medicine. Certainly the medical care of our people is far too important to fall into such bungling hands.

The six references you make to legislation proposed in the Eighty-first Congress are of real concern to those of us like myself who are in thorough accord with the point of view of the medical profession on this subject. My concern and interest in the medical profession has

XUM

been demonstrated at past sessions of the General Assembly of Virginia. I am not only opposed to socialized medicine but to anything that constitutes an entering wedge for socialism into our system of free enterprise and democratic way of life.

Thank you for this opportunity which you have afforded me of expressing my views on this important matter.

Sincerely yours,

HORACE H. EDWARDS.

April 14, 1949.

DEAR DR. EMMETT:

I have received your letter of March 18th addressed to candidates for Governor of Virginia. I am not familiar with the Federal legislation to which you refer, and, as you realize, the Governor of Virginia has no responsibilities for either advocating or opposing Federal legislation. That is the function of our representatives in the Congress.

As a private citizen, I am opposed in principle to national compulsory health insurance.

Cordially yours,

FRANCIS P. MILLER.

March 26, 1949.

DEAR DR. EMMETT:

In response to your recent request for my views on compulsory health insurance, I would like to state that I am unalterably opposed to it.

Such a proposal seems to me a direct violation of individual rights in their most intimate form.

Aside from a public health service, and in some cases, Federal aid for hospital construction I believe that medical care now is a much higher level than it would be under any measures so far proposed in Congress.

No doubt exists in my mind that the dollar now spent on medical care buys a much greater service than the same dollar would if it were by-passed through the government.

If elected governor you may expect me to fight any measure which tends toward a socialization of medicine.

Sincerely,

NICK R. PRILLAMAN.

March 29, 1949.

General Practitioners Support Educational Campaign.

In his annual report to three thousand delegates attending the annual Scientific Assembly of the American Academy of General Practice in Cincinnati recently, Mac F. Cahal, executive secretary, pledged solid support in the American Medical Association's fight against compulsory sickness insurance.

Mr. Cahal said the Academy, which claims a membership of 10,000 general practitioners, will give its full support to the A.M.A.

"A few groups of dissidents and malcontents within the profession have sought to weaken the A.M.A. by criticizing it," Mr. Cahal said in his report to the delegates. "The final outcome of the present administration's drive to nationalize medicine under bureaucratic control will determine the system of political economy under which the citizens of the country will live in years to come. American doctors are on the front line in a war of philosophies between socialism and individual freedom."

Word also comes that the General Practitioners of Virginia have gone on record in support of cancer education for doctors to the extent of agreeing to sponsor such a program. It is understood that this is being done in cooperation with the Medical Society of Virginia's Cancer Committee, the Cancer Department of the State Health Department, and the Continuation Education Program as sponsored by the Medical Schools.

All members of the Virginia Academy of General Practitioners were urged by their Board of Directors to support and advocate participation by their patients in Blue Shield and Blue Cross, or some commercial insurance plan for the pre-payment of medical care and hospitalization.

Fluorescent Light Tubes—Caution.

Handle fluorescent light tubes with caution and dispose of them carefully, advise three doctors from the Plastic Surgery Service of Kings County Hospital, Brooklyn.

Writing in the April 23 *Journal of the American Medical Association,* Walter A. Coakley, M.D., Raymond N. Shapiro, M.D., D.D.S., and George W. Robertson, M.D., say that cuts from broken fluorescent light tubes may cause serious ulcers and tumors which can be cured only by removing tissue from a wide area surrounding the injury.

The doctors report that a 16-year old boy developed a tumor from a cut caused by a broken fluorescent tube. They believe the tumor was due to beryllium inside the tube.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Disease Control of the State Department of Health for April 1949, as compared with the same month in 1948, and for the period of January through April 1949 compared with the same period in 1948, is as follows:

	April 1949	April 1948	Jan.-April 1949	Jan.-April 1948
Typhoid and paratyphoid	11	11	25	41
Diarrhea and dysentery	215	270	1,099	1,188
Measles	5,395	656	15,364	2,714
Scarlet fever	78	90	317	431
Diphtheria	10	12	52	83
Poliomyelitis	1	2	8	6
Meningitis	11	11	40	37
Undulant fever	5	8	19	29
Rocky Mountain spotted fever	2	0	2	0
Tularemia	0	1	7	20

BRUCELLOSIS

The eradication of human brucellosis is dependent upon the eradication of brucellosis in livestock —principally cattle, swine and goats. There is no evidence of human-to-human transmission. The amount of human brucellosis occurring annually is not easily determined, but with approximately 4,000 diagnosed cases reported in the United States annually, it is estimated that there are probably 40,000 cases unrecognized.

In Virginia the reported cases averaged 35 for the period of 1936-1946. The cases reported for 1946, 1947 and 1948 were 70, 74 and 82 respectively. There have been 12 deaths reported from brucellosis since 1939.

Two human groups are especially liable to brucellosis infection:

1. Those who handle infected animals on the farm, in slaughterhouses and in meat handling plants.

2. Those who use contaminated raw milk and its products. In Mexico, the principal factor in high incidence is the widespread use of goat's milk and cheese from animals infected with B. melitensis.

At the recent Southern States Brucellosis Conference in Memphis, Tenn., Dr. Raymond Fagan, of the Harvard School of Public Health, gave a preliminary report of findings in an Indiana Survey of positive reactors among animals and humans. From this survey, begun in 1946, the following findings in six Indiana Townships are significant:

7,700 cattle tested ---------- 5½% reactors
2,900 swine tested ----------5 % reactors

Of 1,700 persons tested 1,100 gave histories of contact with animals, and 600 no histories of such contact. Of the contacts there were found to be:

500 men ---------- 3% reactors
300 women ---------- 1% reactors
300 children (200 boys) -- 2% reactors
(100 girls) -- 0% reactors

Among the 600 persons who did not come in contact with animals, there were no positive reactors. The following figures are significant, among workers with animals and among plant workers:

500 veterinarians ---------- 28% reactors
142 rendering plant workers -- 27% reactors
400 slaughterhouse workers --- 13% reactors

Of floor workers, 30% reacted, in striking contrast to 1% in truck drivers, and 0% in clerical and office workers.

These figures demonstrate the importance of contact with infected animals as a factor in the spread of brucellosis to man.

It has been demonstrated that cattle can be infected by both Brucella melitensis and Brucella suis. However, it has been the general belief that Brucella abortus is not pathogenic for swine. Now come McCullough, Eisele and Pavelchek, who report* the recovery of B. abortus from the lymph nodes of 8 hogs. Confirmation of this finding will be awaited with interest.

In a series of 193 cases of brucellosis in humans, Dr. A. L. Braude, of the University of Minnesota Medical School, reports the organism involved as follows:

B. abortus, 84.5%, B. suis 7.8% and B. melitensis 6.7%

In the treatment of brucellosis, Aureomycin has given dramatic results in acute cases.

**Public Health Reports*—April 29, 1949.

XUM

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President—MRS. R. M. REYNOLDS, Norfolk
President-Elect—MRS. C. E. HOLDERBY, Hilton Village
Recording Secretary—MRS. T. S. CHALKLEY, Richmond
Corresponding Secretary—MRS. CHARLES LUPTON, Norfolk
Treasurer—MRS. REUBEN SIMMS, Richmond
Parliamentarian—MRS. H. W. ROGERS, Norfolk
Historian—MRS. M. H. HARRIS, West Point

Norfolk.

Mrs. Mallory S. Andrews, President of The Woman's Auxiliary to the Norfolk County Medical Society hit a high note of city-wide interest in presenting a Public Relations-Health Education Meeting on April 26th.

850 printed invitations were sent to women's organizations, lay people and doctor's wives. The press and radio spot-lighted the meeting with excellent publicity for about a week and more than 500 were present.

At the morning session, Dr. Thomas N. Spessard, Norfolk psychiatrist and neurologist, spoke on Prevention of Mental Illness. He emphasized the basic emotional reactions, which are factors in producing mental disorders and the importance of increasing the general understanding of mental disorders as a whole in order to utilize this knowledge in their prevention.

Dr. Granville L. Jones, Superintendent of The Eastern State Hospital, Williamsburg, discussed The Treatment of Mental Illness, and stated that mental illness can best be described as a disease in a personal social adjustment and such a disturbance can arise from either physical, intellectual or emotional causes, thus making it necessary to treat a psychotic patient in each of these ways.

Following this a panel discussion on Alcoholism was given by Dr. James Asa Shield, of Richmond. Dr. Shield, affirming alcoholism as a serious personality disturbance said the drinking of alcohol contributes to chronic degenerative conditions of the liver, kidney, brain and other organs. He pictured an alcoholic as being probably the most miserable of all sick people. The first goal in treating a sufferer is to get the patient to admit that he is an alcoholic. He can only be helped when he acknowledges that he needs help.

Concluding the morning session, a member of The Tidewater Group of Alcoholics Anonymous spoke on the magnitude of the public health and economic problem facing the country. Of 58,000,000 users of alcohol, 3,750,000 are excessive drinkers and 800,000 are recorded chronic alcoholics. There are many more contributing to a conservatively estimated loss to industry of one billion dollars in production and 24 million man-hours of work per year. The A.A.s claim qualified recovery for approximately 75% of those who give their method a sincere trial.

At the afternoon session Mr. John Tatem, Director of Safety Patrol of Tidewater Automobile Association, Norfolk, spoke on Safety and Traffic Education.

Mr. Fenton Jordan, City of Norfolk Engineer, then spoke on Engineering and cited the race between death and safety that has been going on for many years, adding safety is the winner.

The concluding discussion was a most vigorous talk given by Captain W. L. Grath, Captain and Safety Engineer of Virginia State Police, Richmond. He reviewed the cost of traffic accidents in Virginia, with reference to economic aspects, people killed and injured. Education, Engineering and Enforcement are the three slogans of the Virginia Traffic Program. His Department employs trained engineers to consider the physical aspects of what might have contributed to accidents and carries out a program for all officers. It has even taken to the air—Virginia has three light planes, which reduce time to a minimum in spotting trouble on the many highways. Enforcement of traffic laws and regulations is the kind friend of every law-abiding citizen and is the bulwark of the Democracies.

JOSEPHINE T. HORTON,
(Mrs. Albert G. Horton)
Chairman of Publicity

Danville-Pittsylvania.

The Auxiliary celebrated Doctor's Day April 2, with a cocktail party and dinner at the Hotel Burton. There were sixty present. Dr. C. W. Pritchett was especially honored because he has practiced medicine in Danville for over fifty years.

Dancers from the Ann Boyer school of dancing presented several numbers during dinner. The highlight of the evening was the projecting on a large screen various amusing photos of the doc-

tors present. Original poetry which accompanied each photo brought gales of laughter. Group singing accompanied by Mrs. Asa Viccellio brought the party to a close.

On April 7th, the auxiliary met with Mrs. Roy Upchurch with 19 members present. The following reports were submitted:

HYGEIA—Mrs. D. L. Arey, Chairman, reported 17 one-year subscriptions, and one three-year subscription. The Auxiliary has placed it in the following centers: Langston High School, (colored) the white and colored Y.M.C.A.'s and Y.W.C.A.'s, and the Schoolfield Y.M.C.A.

MEMBERSHIP—Mrs. T. J. Moran, chairman, reported 40 members this year as against 33 last year.

RUMMAGE SALES—Mrs. M. H. McClintic, chairman reported $203.85 made on the March sales. Plans were discussed for the May sale.

DOCTOR'S DAY—Mrs. C. A. Easley and Mrs. W. E. Overcash gave joint reports regarding the financial status of the party.

A motion was carried that the Public Relations Committee with the help of every member further the wishes of the national organization to oppose Socialized Medicine in and around Danville.

A recommendation was made that the delegate to the state meeting in October suggest that the state dues be raised so that the Auxiliaries will not be called on for additional contributions.

It was voted to contribute $5.00 to the State Maintenance Fund, and $5.00 to the Jane Todd Memorial Fund.

Dr. Samuel Newman, local pediatrician, then spoke on "The Historic Trend of Child Welfare".

MRS. CARL W. WHITE
Publicity Chairman

Northampton-Accomack.

The April meeting of this Auxiliary was held at the home of Mrs. W. Carey Henderson in Nassawadox with Mrs. John R. Mapp as co-hostess. Following luncheon and a social hour, Mrs. R. M. Reynolds, State President of the Auxiliary, spoke on "The Menace of Socialized Medicine, Its Cost and Implications". Mrs. William T. Green, Jr., who presided in the absence of Mrs. Sturgis, then read "A Step in the Wrong Direction" by Dorothy Thompson. Routine business included the announcement of an award of $10.00 to the Auxiliary putting on the most unique, interesting and well-planned "Doctors Day" program.

The next meeting of the Auxiliary will be held at the cottage of Mrs. J. E. Gladstone at Silver Beach.

BOOK ANNOUNCEMENTS

Aesculapius Comes to the Colonies. The Story of the Early Days of Medicine in the Thirteen Original Colonies. By MAURICE BEAR GORDON, M.D. Ventnor Publishers, Inc., Ventnor, N. J. 1949. xiv-560 pages. Illustrated. Cloth. Price $10.00.

Child Health Services and Pediatric Education. Report of the Committee for the Study of Child Health Services, The American Academy of Pediatrics. With the cooperation of the United States Public Health Service and the United States Children's Bureau. The Commonwealth Fund, New York. 1949. xxv-270 pages. Cloth. Price $3.50.

Cardiac Catheterization in Congenital Heart Disease. A Clinical and Physiological Study in Infants and Children. By ANDRE COURNAND, M.D., Associate Professor, Department of Medicine, College of Physicians and Surgeons, Columbia University; JANET S. BALDWIN, M.D., Assistant Professor, Department of Pediatrics, New York University College of Medicine; and AARON HIMMELSTEIN, M.D., Instructor, Department of Surgery, College of Physicians and Surgeons, Columbia University, The Commonwealth Fund, New York. 1949. viii-108 pages. Illustrated. Cloth. Price $4.00.

Clinical Urology. Essentials of Diagnosis and Treatment. By LOWRAIN E. McCREA, M.D., F.A.C.S., F.I.C.S., Clinical Professor of Urology, Temple University Medical School; Attending Urologist, Philadelphia General Hospital. Second Edition. Philadelphia, F. A. Davis Company, 1948. xii-503 pages. With 263 Illustrations, 7 in Color. Cloth. Price $6.50.

The second edition of Dr. McCrea's excellent book follows the general outline of the first, with some amplification and addition of diagrams. The subject matter is concise, well outlined, and presented in an understandable manner. The accepted treatments for urological diseases are up to date.

The book is highlighted by very satisfactory descriptions of office urological procedures and examinations. Each major urological operation is also described for general knowledge, but perhaps not well enough for a surgeon.

It is recommended without qualification as an outstanding book for students, as well as practicing physicians, who desire a positive compendium of urological disease and treatment.

DONALD GILBERT

XUM

EDITORIALS

Joseph Lister (1827-1912)

FEW of us realize how comparatively new aseptic surgery is. We can remember when Dr. Halsted first began using rubber gloves. Dr. George Ben Johnston was a senior medical student in New York when Lister came to this country in 1876 to talk on antiseptic surgery. It was commonly spoken of as Listerism. Before this era it was rare for a wound to heal by "first intention." "Laudable pus" was a common and much sought after phenomenon. When blood vessels were ligated the ends of the silk ligatures were left long and were brought out of the wound so that they could be removed when they sloughed off. Surgery was chiefly of the extremities—amputations, and of the surface of the body. Surgery of the body cavities was too hazardous to warrant its frequent employment. With erysipelas and gangrene rampant, hospitals had a fearful mortality. The work of one man changed all this.

The great Quaker surgeon, the father of aseptic surgery, was born at Upton, Essex, on April 5, 1827. His father was a scientist of note who perfected the achromatic lens and improved the compound microscope. Upon graduating in London, Lister went to Edinburgh and served as house surgeon under Syme. Three years later he married Syme's daughter, and soon afterwards was made assistant surgeon to The Royal Infirmary. He was appointed to the Chair of Surgery at Glasgow in 1860. It was in Glasgow that he learned of Pasteur's work proving that microbes were the cause of putrefaction, and at once saw the significance of this work for surgery. In 1869 he succeeded his father-in-law as Professor of Clinical Surgery in Edinburgh. In 1877 he went to London as Professor of Surgery at King's College. He retired from practice in 1896 but not from scientific studies. From 1895 to 1900 he was President of the Royal Society and in 1896, President of the British Medical Association. In 1883 he was created a baronet and in 1897, was raised to the peerage as Baron Lister of Lyme Regis. In 1902 he was nominated an original member of the new Order of Merit. The name of the British Institute of Preventive Medicine, of which he was one of the founders, was changed to the Lister Institute of Preventive Medicine.

Early in his career Lister became interested in the study of inflammation and the coagulation of blood. His first paper, shortly after he became Assistant Surgeon to the Royal Infirmary, was on "The Early Stages of Inflammation." His Croomian lecture to the Royal Society in 1863 was upon the coagulation of the blood. When Dr. Thomas Anderson in 1865 called his attention to Pasteur's investigations on fermentations, Lister at once set to work to devise means of keeping microbes out of wounds. His first experiment made in 1865 was upon a compound fracture and the agent he used was carbolic acid which he applied to the wound undiluted. He reported his results in 1867 in the Lancet. He then directed his attention to mitigating the escharotic effect of carbolic acid and to improve ligatures. Eventually he adopted first carbolized catgut and finally sulphochromic catgut. He improved surgical dressings and in an attempt to provide an atmosphere free from germs in the operating room he introduced his famous spray of 5 per cent solution of carbolic acid.

Lister's work was quickly accepted on the Continent, especially in Germany, but as usual with great medical discoveries it met with opposition at home. Scotland at the time had a National Health Service. Lister was excluded from the government employment because "the Minister of Health had been fully informed . . . that the

use of carbolic acid, since it prevented the formation of laudable pus, was inimical to the patient. . . . The Minister of Health then rose to say that he was proposing to introduce regulations making the use of carbolic acid and similar substances, loosely described by Mr. Lister as 'antiseptics' (whatever that might mean) illegal."

Synthetic Chloromycetin

THE announcement of a synthetic chloromycetin by the Parke, Davis Laboratories provokes a number of reflections. This is the first time that an antibiotic has been manufactured chemically. It reminds one of the time Dr. John Abel first made epinephrine synthetically. Diethylstilbestrol belongs to a slightly different category in that it is not identical with estrogen chemically but only clinically. Each, however, demonstrates that the scientist is not entirely dependent on living processes to manufacture antibiotics and hormones. When synthetic means are discovered, manufacture in quantity is simplified.

Chloromycetin was discovered by Dr. Paul R. Burkholder of Yale in an extract of Venezuelan mold. Drs. Quentin R. Bartz and John Ehrlich of the Research Laboratories of Parke, Davis and Company isolated it in crystalline form. This was reported in October 1947. The drug was found to have rickettsiostatic properties when tested in infected chick embryos. Many *Monthly* readers will recall the thrilling report of the clinical tests on scrub typhus in Malaya that Dr. Theodore E. Woodward told of at a recent meeting of the Richmond Academy of Medicine. Through a fortunate error in diagnosis the drug was found to be effective for typhoid fever which is also endemic in the Malay States. The only difference is that it takes three or four days for the fever of typhoid to subside. This was so constant that it was used as a check in the differential diagnosis of the two diseases. The Army research team will again go to the Southwest Pacific to compare the synthetic chloromycetin with the crystalline product.

The rickettsiae are micro-organisms that resemble the viruses in that they grow only within living cells. Most of them are slightly too large to pass through fine bacteriological filters. Five diseases are recognized as being caused by the rickettsiae: (1) Epidemic typhus (louse borne) (classic European, old world typhus); (2) Endemic or murrine (flea borne) (Mexican typhus or Brill's disease); (3) Scrub typhus (mite borne) (Tsutsugamuski disease, Japanese river fever, tropical typhus, mite fever); (4) Spotted fever (tick borne) (Rocky Mountain spotted fever, tick fever, black fever, blue disease), and (5) Q fever.

Scrub fever, unlike the other types of typhus fevers, had no good means of prophylaxis. There was no vaccine for it, nor poison for the mites. For this reason chloromycetin is especially valuable. It seems to be a specific remedy for rickettsial diseases. It also offers great promise in some of the bacterial diseases, such as typhoid fever, Brucellosis and gas bacillus infections. On account of the prevalence of spotted fever in the South Atlantic States these investigations will be watched with especial interest by Virginia doctors.

XUM

South of the Border

SOUTH of the Rio Grande there is an attractive land that Americans to the North would do well to know better. It is a land of contrasts, surprises and contradictions. It has developed great artists who paint in bold contrasting colors. Its architects build the most beautiful renaissance museums, baroque churches or ultra modernistic apartment houses. Thirty per cent of Mexico's people live in one-room shacks with mats on the earth floor for beds, and the scantiest sanitary provisions. About one-sixth belong to the privileged class with incomes from $150 a month up. A family with $150 a month income can have a three-room apartment, one or two servants and a car. At $300 to $500 the apartment enlarges and the car is of more recent vintage. In Mexico City and Cuernavaca we saw very lovely homes attesting great wealth. Ninety-nine per cent of the people are Catholic and yet when the people gained control of the government they confiscated all church property, and the activities of the priests were drastically limited and clerical garb was banned. The church now operates with entire liberty save for the threatening shadow of the anti-clerical law of 1917 which still stands. The churches are filled with devout worshippers.

Mexico has a civilization that antedates ours by a century and its civilization supplanted several highly developed native civilizations that extended back to prehistoric times. We saw one pyramid, the plateau pyramid of Ciuciuleo that was built about 5000 B.C., by an unknown race. Remains of Maya, Toltec and Aztec civilizations are abundant in stone carving and pottery, especially. Examples of wood carving, tapestry and feather work are rare since these substances are more perishable but enough is known to excite wonder at the skill of these stone age people. At Teotihuacan which is supposed to be the site of the capital of the Toltec nation we saw the huge pyramids to the Sun and the Moon and some wonderful Toltec carvings in the Ciudadela at the south end of the area that covers some eight square miles.

Mexico City is the oldest city in America, founded as it was by the Aztecs in 1325. A part of the Aztec capital still survives near the cathedral in the form of a portion of the Great Temple of the God of War. The National University dates back to 1533. The first printing shop in the Western Hemisphere, established by Giovanni Paoli about 1539, was pointed out to us. We went into the patio of the House of the Count of Santiago, erected shortly after the Conquest. It is built of pink tezontle and has massive carved doors leading into the patio which is entirely surrounded by balconies and has a grand stairway on one side. Gargoyles are in the form of cannon. We were told that when this house was built one had to get a royal permit from Spain in order to build a two-story house. Almost across the street is the Hospital de Jesus Nazareno built of similar pink volcanic stone. It was founded by Cortes in 1524 on the spot where he first met Montezuma. The hospital has been in continuous operation since that time and we saw patients sitting on its pleasant galleries that surround its two patios, and white coated doctors going back and forth. Its board room has an original portrait of Cortes. . . . In this connection it should be stated that Mexico has a wonderful Childrens' Hospital and a Cardiology Institute, both housed in ultra modern buildings.

Mexico City is situated in a broad flat plain 7,400 feet above the sea level. In the dry season this arid plain looks neither tropical nor mountainous. Although we were in the tropics we slept under blankets. Overlooking the city is Chapultepec Park and Castle. We were standing on the terrace overlooking the beautiful panorama of the city at our feet when our guide pointed out a new security hospital going up in the

foreground. We asked her what the people thought of social security. She replied in no uncertain terms that they did not like it. In the first place they did not like the compulsion and her Castilian accent left no doubt but that she really meant compulsion. In the second place they got very little value for their payroll deductions.

The people of Mexico have even less sanitary security. Guide books warn you against raw fruit. Outside of the cities, water, ice, milk and butter are said to be unsafe. Of our party of twelve who went on a two day trip to Taxco, three were taken sick on the trip and two others were known to have gotten sick afterwards. Our hotel was ultra modern in structure and appointments. The waiters were continental in costume and suavity, and yet we saw them emptying the left over drinking water into a waste bucket, polish the glass with a napkin and replace it on the table for the next customer.

The Mexicans are descendants of fierce man-eating Indians or their equally fierce and arrogant Spanish conquerors. Surprisingly, the present day Mexicans are gentle, polite, amiable people, the very embodiment of patience. Apparently they love flowers, for the markets are filled with all sorts and they are indeed beautiful. The bougainvillaea and the climbing geraniums bloom all the year. The jacaranda, a blue plumbago vine and the royal poinciana as well as myriads of roses, carnations and gladioli give color to the suburbs. Mexican children are wonderfully well behaved. During Holy Week the churches and market places and public squares were filled with them. We did not see a cross or peevish child. Altogether Mexico makes an almost perfect vacation land. It has exotic beauty, interesting and varied architecture, age old culture, historic back ground, a wonderful climate, and a polite people.

Medical Home Missionaries

IN the April *Monthly* we suggested that Home Missions might play an important role in supplying physicians in certain rural areas. We now find that this has already been done by the Lutheran Church at Konnarock, at the foot of White Top Mountain in southwest Virginia. For years the Southern Mountain Mission Work has attempted to meet the medical as well as the spiritual needs in this area. At first they depended on nurses who did the best they could to promote clinics by non-resident physicians, hauling patients long distances over rough mountain roads to town, and supplementing the treatments of the physicians to the best of their ability. In 1940, a modern medical center was built by the Lutheran League of America. It has waiting rooms, offices, examination rooms, X-ray room, laboratory and a two bed emergency ward, and a physician's apartment. The equipment is modern in every respect.

Dr. Heinz Meyer, a German refugee, was employed as resident physician. According to the *Konnarock Echoes* the greatest health problem is malnutrition and much of the doctor's time is devoted to educating the people in nutrition and how to grow the right kind of food. A deaconess nurse is connected with the clinic and she and Dr. Meyer have developed an efficient maternity service. With the help of locally trained midwives they deliver 90 per cent of the babies in their homes. The mothers attend the prenatal clinic and complicated cases are delivered at the Center. A better-baby clinic is conducted at the Center. After six years Konnarock Medical Center is almost self-supporting. What it has done in the way of elevating the health standards of the community is incalculable.

XUM

SOCIETIES

Richmond Academy of Medicine.

The third annual J. Shelton Horsley Memorial Lecture at the Richmond Academy of Medicine was delivered on April 26th. Dr. A. C. Broders, director of the division of surgical pathology at the Mayo Clinic, Rochester, spoke on "Functioning Cancer". He is a graduate of the Medical College of Virginia and has been awarded the honorary degree of doctor of science by the College. During 1935 and 1936, Dr. Broders served as professor of surgical pathology and director of cancer research at the Medical College of Virginia.

The J. Shelton Horsley Memorial Lectures were established in memory of Dr. Horsley by his son, Dr. Guy W. Horsley. They are given each Spring at the Academy of Medicine by outstanding men in the fields of surgery, pathology and physiology.

Arlington County Medical Society.

At a special meeting of this Society, held on March 24th, Dr. William P. Howard of Albany, New York, was the speaker. He is a director of the American Association of Physicians and Surgeons, and the Arlington Society has recently joined several other Virginia societies in endorsing this Association.

Dr. John T. Hazel is president of the Arlington Society and Dr. John B. Leary is secretary-treasurer.

The Mid-Tidewater Medical Society

Held its second quarterly meeting on April 26th at Gloucester Court House, Dr. M. H. Harris of West Point presiding.

The question of formation of "Health Councils" in the various counties was discussed and it was decided that the Vice-Presidents from the several counties represented should explore the feasibility of the formation of these councils in their counties and that further discussion would be held at the next meeting.

The proposal that a joint meeting be held with representative laymen was discussed, but no action was taken.

Dr. T. Dewey Davis presented a paper on Rheumatoid Arthritis which was well received and the discussion was participated in by most of the members present.

The meeting was adjourned to meet in Urbanna on July 26th.

WILLIAM H. HOSFIELD
Secretary

The Fourth District Medical Society

Met at the Central State Hospital, Petersburg, on April 19th. The effect of the government's proposed prepaid medical plan on private practice was outlined by Dr. M. Peirce Rucker, President of the Medical Society of Virginia. Other speakers included: Dr. John T. T. Hundley, Lynchburg, Chairman of the education campaign for the state society; Dr. Walter B. Martin, Norfolk, a trustee of the American Medical Association; Dr. Benjamin W. Rawles, Jr., Richmond, chairman of the committee on hospital care of the Richmond Community Council; and Mr. Henry S. Johnson, director of public relations of the state society. Dr. Fletcher J. Wright, Jr., Petersburg, conducted a panel discussion on the effects of the medical plan proposed by President Truman.

Dr. J. A. B. Lowry, Crewe, is president of this Society, and Dr. William S. Sloan, Petersburg, secretary-treasurer. Dr. William Grossmann, Petersburg, is chairman of the steering committee.

NEWS

The Virginia Peninsula Calls All Doctors!

Members of the Medical Society of Virginia, your annual meeting October 9 to 12 will be held in one of the nation's showplaces—the Virginia Peninsula—down where America got started. When you open your sessions at the Chamberlin Hotel on Old Point Comfort you will be standing on the ground where the first settlers paused briefly on their way to Jamestown. Here, the old chronicler relates, "They found a channel which put them in good comfort." Plan to come several days in advance of the meeting (or stay on afterwards) to take in the many fascinating attractions which the Virginia Peninsula offers to you.

From the Chamberlin's door you will gaze upon the thrilling panorama of Hampton Roads, one of

the world's greatest natural waterways. Cargo steamers bound for Marseilles, Buenos Aires and Hong Kong glide slowly toward the sea trailing plumes of black smoke. Gray battleships and aeroplane carriers ride sullenly at anchor. Hard by the hotel is Fortress Monroe where Jefferson Davis' place of confinement is commemorated. The sister cities of Newport News, Hampton and Phoebus, which are linked together like Siamese triplets, will bid you welcome. Hampton which was founded in 1610 is the oldest continuous settlement in English-speaking America. It was the birthplace of the first president of the Medical Society of Virginia, James McClurg (1747-1823).

In old St. John's Church which is much frequented by tourists, you will find a lovely stained glass window in memory of George William Semple (1810-1883), thirty-third president of the Medical Society of Virginia. Many of our Peninsula doctors are inveterate sailors. They will be pleased to see that the aquatic-minded among you enjoy the pleasures of the Hampton Yacht Club of which Dr. Russell Buxton is the commodore. To the north of Hampton is Langley Field and the National Advisory Committee for Aeronautics where scientists toil night and day in the giant wind tunnels to unlock the secrets of the air. High in the sky shooting swift and straight like wild geese you will see flocks of jet planes whose speed is faster than sound.

In Newport News you may visit the giant shipyard which has built some of the nation's most famous naval vessels and passenger ships. This is where the carriers, Yorktown, Hornet and Coral Sea were built. Here the keel of the $189,000,000 supercarrier, The United States, was laid before construction was abandoned by order from Washington. Tours of the yard will be made available to you. One of the world's most remarkable museums is the Mariner's Museum located just outside of Newport News. Everything pertaining to ships from the dawn of history to the present time has been collected. For you golf enthusiasts there is a Golf Museum at the James River Country Club, which is one of the finest outside of St. Andrew's, Scotland. Only a short run up the Peninsula are the historical shrines of Williamsburg, Jamestown and Yorktown. See the remains of the old church at Jamestown on whose site Pocahontas was baptized and married to John Rolfe. Visit the famous Williamsburg Restoration. Go over the battlefield at Yorktown, also inspect the nearby Moore House where Cornwallis' surrender was arranged (this is the original building.) Guided tours of these attractions can be arranged. The Virginia Peninsula is also a noted playground. It has unexcelled facilities for swimming, boating, fishing and golfing.

The Warwick County Medical Society led by Dr. George S. Grier, III, and assisted by the Elizabeth City County Medical Society of Hampton and Phoebus is going all out to make your stay a memorable one. The local Woman's Auxiliary led by Miriam D. Bradley and backed by Sarah Holderby, President-elect of the State Auxiliary, is planning things for your ladies to do. So put it on your calendar—annual meeting of the Medical Society of Virginia, Chamberlin Hotel, Old Point Comfort, October 9 to 12. Come and see us down here in "The Nation's Cradle".

CHESTER D. BRADLEY, M.D.

Scientific Exhibits at Annual Meeting.

Dr. Vincent W. Archer, University of Virginia, Charlottesville, who is chairman of Scientific Exhibits of the Medical Society of Virginia, would like for those doctors interested in having an exhibit at the annual meeting at Old Point Comfort, October 9-12, to contact him as soon as possible. Applications for exhibits will be accepted as long as space is available—of course, the best spaces will go to those who apply first.

Southern Pediatric Seminar.

The 29th annual session of this Seminar will be held at Saluda, North Carolina, July 18-30. The course is a post-graduate, summer course in methods of diagnosis, prevention and treatment of diseases of children. It is designed primarily to fit the needs of the general practitioner and the practical application is stressed. The lecturers represent some of the outstanding pediatrists in the South, who volunteer their services to create a teaching center where the most advanced information in this important branch of medicine is presented. Dr. Ambrose McGee, Richmond, is a member of the faculty. For information and registration, address M. A. Owings, secretary-treasurer, Saluda, North Carolina.

Dr. H. J. Warthen, Jr.,

Richmond, was elected to membership in the American Surgical Association at its meeting held in Saint Louis in April.

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News from University of Virginia School of Medicine.

On April 1st, under the auspices of the Post-graduate Program for House Officers, Dr. John S. Lundy of the Mayo Clinic lectured to the faculty and student body on the subject: "Anesthesiology Offers Many Opportunities".

Dr. James F. Brailsford of Birmingham, England was guest speaker at the meeting of the Virginia Radiological Society, held at the University of Virginia Hospital on April 2. He spoke on the subject: "Diagnosis of Bone Tumors".

On April 4th, the Post-graduate Program for House Officers presented as guest speaker Dr. Charles H. Best, University of Toronto. The subject of his lecture was "The Pancreas, The Guardian of the Liver".

Dr. Oscar Swineford, Jr., spoke on the subject, "Some Problems of Bacterial Allergy", at the meeting of the Southwestern Allergy Forum, held in El Paso, Texas on April 4th and 5th.

Dr. H. B. Mulholland addressed the Harrison County Medical Society, in Clarksburg, West Virginia, on April 7th, on the subject, "Modern Treatment of Diabetes Mellitus".

Dr. Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins Medical School, delivered the first Annual Tiffany Johns Williams Memorial Lecture on April 8th. The title of Dr. Eastman's lecture was "The Placental Barrier".

Dr. H. Rowland Pearsall has been promoted to Assistant Professor of Internal Medicine and designated Coordinator of the Cancer Program, effective April 1.

Dr. Page Booker has been appointed Instructor in Pediatrics on completion of his residency on July 1.

"In Tribute to the American Doctor"

Is beautifully portrayed in the Philip Morris spread in the advertising pages of this issue. They invite you to send for a copy suitable for framing. Display it in your reception room—your patients will enjoy reading it.

The Virginia Society of Ophthalmology and Otolaryngology

Held its thirtieth annual meeting in Richmond on May 14th, under the presidency of Dr. W. Wallace Gill, Richmond. The following program was presented: Uveitis by Dr. M. Elliott Randolph, Baltimore (invited guest); External Otitis by Dr. M. H. Hood, Portsmouth; Clinical Observations on a Common Dermatological Problem by Dr. Thomas W. Murrell, Jr., Richmond (invited guest); Clinical Observations as Viewed by the Allergist by Dr. J. Warrick Thomas, Richmond (invited guest); Management of Primary Glaucoma by Dr. William P. McGuire, Winchester; Venous Thrombosis by Dr. H. S. Hedges, Charlottesville; Melkersson's Syndrome by Dr. Francis H. McGovern, Danville; Carcinoma of the Pterygium by Dr. H. Grant Preston, Harrisonburg; and The Haag-Streit Binocular Microscope by Dr. Elbyrne G. Gill, Roanoke.

Dr. Rachel F. Weems,

Formerly of Harrisonburg, will open her office in Ashland on July 1st where she will specialize in physical medicine and minor orthopedics. She has been in Pittsburgh, Pennsylvania, for the past five years where she has been working under Dr. Jessie Wright, a consultant for the National Foundation of Infantile Paralysis, and head of the D. T. Watson Home for Crippled Children. Dr. Weems has been assistant in physical medicine at the Children's Hospital and on the staff at the D. T. Watson Home. She has also done special work in cerebral palsy, arthritis, back and foot conditions and peripheral vascular disease.

Married.

Dr. H. Ward Randolph and Mrs. Lucy Taylor O'Neale, both of Richmond, April 23rd. They will make their home at "Warwick" in Lilian.

Dr. William A. Cover, Elkton, and Miss Margaret Isabella O'Keeffe, Grundy, April 18th. He is a graduate in medicine of the University of Virginia, class of 1947.

Dr. Henry Chesley Decker and Miss Margaret Fisher, both of Baltimore, April 23rd. He graduated from the Medical College of Virginia in 1947.

Dr. Ernest Randolph Trice, Baltimore, and Miss Virginia Dorsey, Richmond, May 7th. Dr. Trice is a graduate of the Medical College of Virginia in 1947.

Dr. Robert D. Keeling,

Class of '46, Medical College of Virginia, after nearly three years' service in the Navy, has located for practice at South Hill.

Health Department News.

Dr. E. D. Hardin was recently appointed Health Officer for the Page-Warren-Shenandoah Health District with headquarters at Luray. Dr. Hardin was formerly Health Officer of the Pittsylvania County Health Department located at Chatham.

Dr. William H. Kelly,

Now director of the Norfolk Mental Hygiene Center, will become director of the Memorial Guidance Clinic, Richmond on August 1st. He is a graduate of Marquette College, Michigan, class of 1935, and has been in Norfolk since 1946. This appointment brings to a close a director search that has lasted more than a year since the death of Dr. Harvie Coghill in February 1946.

Dr. John Edgar Stevens,

Class of 1941, Medical College of Virginia, has located for practice at 2608 Monument Avenue. His practice will be limited to internal medicine with a sub-specialty of hematology.

The Gill Memorial Eye, Ear, and Throat Hospital,

Roanoke, has completed its Twenty-Second Annual Spring Graduate Course, and had a registration of 250 doctors from all parts of the United States and Canada. The next course will be given beginning April 3, 1950.

Post-Graduate Course.

The Harvard Medical School announces a post-graduate course in Modern Treatment of Fractures and Other Traumatic Conditions to be held at the Massachusetts General Hospital, October 24-November 3, 1949. This course is covered by the G.I. Bill of Rights. For further information write Assistant Dean, Courses for Graduates, Harvard Medical School, 25 Shattuck Street, Boston.

Wanted.

Eye, ear, nose and throat doctor to practice with group in Virginia. Unopposed territory and excellent opportunity. For particulars write "Specialist", care the Monthly, 1200 East Clay Street, Richmond 19. (*Adv.*)

For Rent.

Desirable office, centrally located in Richmond. Reasonable. If interested, dial 5-3267, or address "Office", care this journal, 1200 East Clay Street, Richmond 19. (*Adv.*)

Doctor Wanted

To take over well equipped, eight room doctor's office, with well established practice in eastern North Carolina town of 3000 population. Modern hospital 18 miles distant on route 301 South. If interested write Harrison Drug Company, Enfield, North Carolina. (*Adv.*)

OBITUARIES

Dr. Lewis Mines Allen,

Well-known obstetrician of Winchester, died May 2nd after a long illness. He was seventy-six years of age and received his medical degree from the University of Maryland in 1896. Perhaps one of his most celebrated cases was while he was at the University of Maryland when he delivered Wallis Warfield, now the Dutchess of Windsor. Dr. Allen had taken a prominent part in the civic and medical life of Winchester and Clarke County, having been city health officer and for a number of years chief marshal of the Apple Blossom Festival. He had been a member of the Medical Society of Virginia for thirty-nine years and was at the 1948 meeting, made a member of the Fifty Year Club. His wife and three sons survive him.

The following resolution was adopted by the Medical Staff of the Winchester Memorial Hospital.

Dr. Lewis M. Allen died at Winchester Memorial Hospital on the morning of Monday, May 2, 1949, in his seventy-sixth year. He was a valued member of the medical staff of the said hospital over a long period of years, and, therefore, our close friend and associate. Through the medium of the hospital, and in his office practice he worked with constant and undiminished eagerness for the comfort and well being of humanity, and more particularly as a prominent specialist in obstetrics and gynecology.

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In the practice of his profession, in his home, in his church, and in his community he exhibited untiring zealousness to do good, and his was a high purposeful character, wholly unimpeachable. To justly appraise the value of Dr. Allen's talents, his success in his chosen profession, and his influence among those with whom he lived and worked, one needed only to know this gentle character, and to look at the record of his achievements, which was lengthy and genuinely wholesome.

With a distinguished background of a family that had long been prominent in affairs in Clarke County, Virginia, and Jefferson County, West Virginia, it was only natural that Dr. Allen was constantly inspired to attain success in everything that he undertook. A certain incident in his own early experience moulded his decision to devote his life's work to obstetrics and the application of treatment designed to greatly lessen the perils of child birth, and to that end he succeeded most admirably.

All of us who knew and worked with Dr. Allen respected and admired him. He was possessed of a sense of honor which was never conscious of temptation. His devotion to his loved ones, to his patients, his friends and his associates was a paramount guide in the conduct of his life.

We who belong to the medical profession, and who compose the medical staff of the Winchester Memorial Hospital, along with his countless thousands of friends and admirers mourn his loss, and pledge ourselves to emulate as far as possible the many virtues which our beloved friend and associate possessed, and therefore unanimously adopt this Resolution of sympathy in memorium to our friend and associate at this our regular monthly meeting held this 4th day of May, 1949.

Dr. Daniel Dodson Willcox,

Prominent eye, ear, nose and throat specialist of Petersburg, died April 18th after an illness of several weeks. He was seventy-two years of age and a graduate of the former University College of Medicine, Richmond, in 1901. Dr. Willcox was a past president of the Petersburg Medical Faculty and had been a member of the Medical Society of Virginia for forty-five years. His wife survives him.

The Petersburg Medical Faculty acknowledges with deep regret the loss of one of its oldest and most beloved members, Doctor Daniel Dodson Willcox, whose death occurred April 18, 1949, at the Petersburg Hospital. Dr. Willcox had been in active practice for forty-five years and limited his work to diseases of Ear, Eye, Nose and Throat.

BE IT THEREFORE RESOLVED that the Petersburg Medical Faculty wishes to express to the family of Dr. Willcox their sincere sorrow in his untimely passing; that the Medical Profession, particularly the Speciality of Ophthalmology and Otolaryngology, has suffered a great loss. From the beginning of his specialization, in which he was a pioneer in this community, he gave freely of his time and talents and his attractive personality endeared him to his patients as well as to his professional colleagues. The community has lost a valuable citizen and the medical profession a talented and beloved physician who will be greatly missed.

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to his family, to the local paper, recorded in minutes of Petersburg Medical Faculty and to the VIRGINIA MEDICAL MONTHLY.

CHARLES S. DODD, *Chairman*
MEADE C. EDMUNDS
GEORGE H. REESE

Dr. Walter Fitzgerald Hartman,

Well-known physician of Swoope in Augusta County, died April 8th. He had been in bad health for several months and was in Florida at the time of his death. He was eighty-six years of age and received his medical degree from the University of Virginia in 1889. He served as Captain in the first World War and had practiced in Augusta County until his retirement several years ago. Dr. Hartman had served as president and secretary of the Augusta County Medical Society and had been a member of the Medical Society of Virginia for fifty-six years. He was made a member of the Fifty Year Club at the 1948 meeting of the Society. His wife survives him.

Dr. Spurgeon Boone Moore,

Portsmouth, died May 2nd, shortly after he suffered a heart attack. He was fifty-seven years of age and a graduate of the Medical College of Virginia in 1918. Dr. Moore had lived in Portsmouth for thirty-one years where he specialized in eye, ear, nose and throat. He was active in civic affairs and served for a time as a member of the city council. His wife and a daughter survive him.